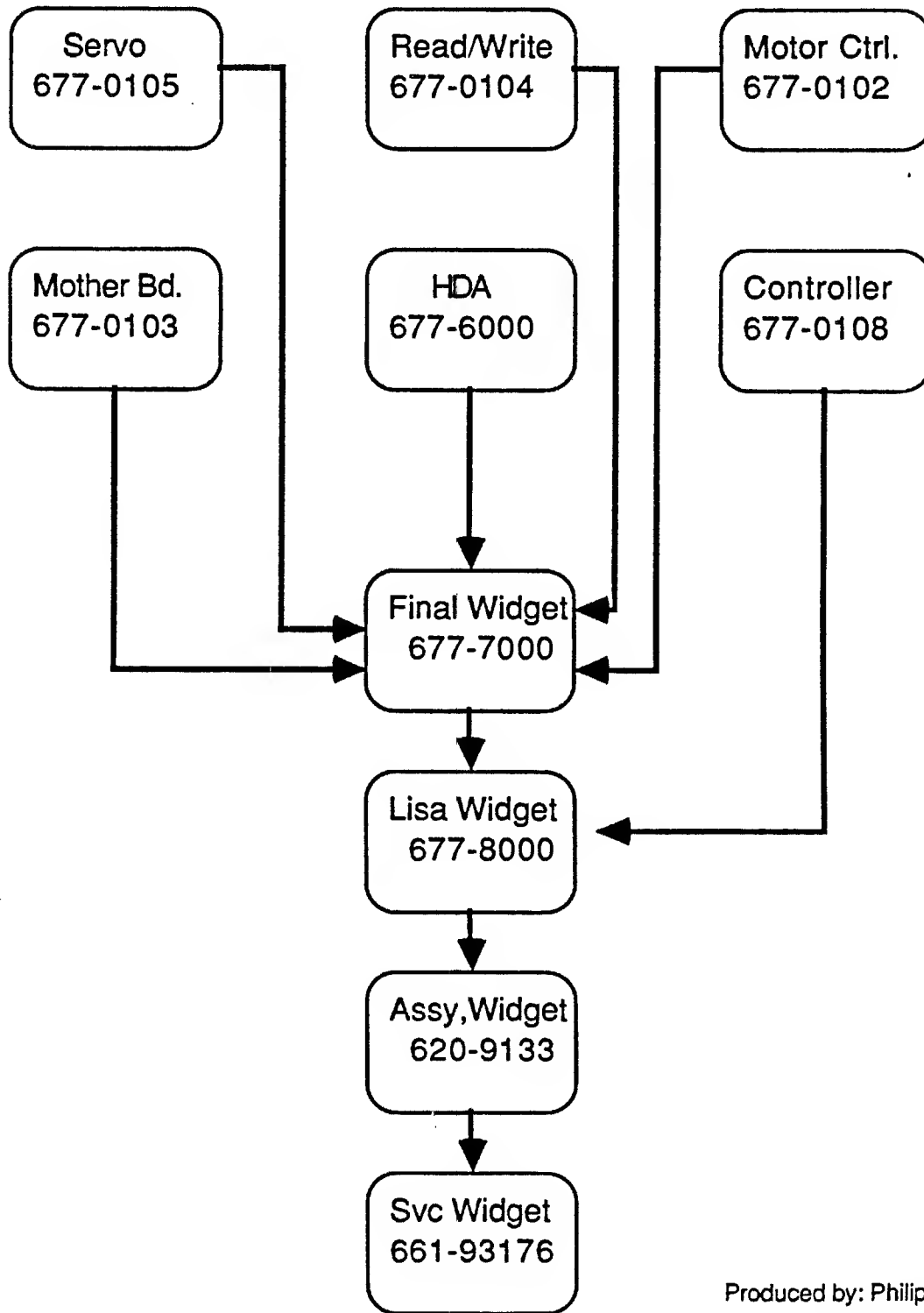


# Widget Build Tree



Produced by: Philip Atwood  
August 15, 1985

EFFECTIVITY DATE: ALL

S I N G L E L E V E L R I L L S O F M A T E R I A L

PARENT PART: 661-93176

1 LISA 2/10 HDA SVCE STOCK

UM: EA

ECN: S319

1

ERC: A

SRCE CODE: \*

ABC: \*

DATE: 01-Mar-84

P E

DESCRIPTION

S T S A P

EXTENDED

START

CLOSE

LT

ITEM COMPONENT N R

REMARKS

PR R Y P B L

QUANTITY

DATE

S/N

OPR

NO. PART NO. D C

CD C P R C N U M

PER

CHG

DATE

SEQ

ST

000 661-93176D1 A PKG.DWG.,LISA 2/10 HDA

\*\* \*\* EA

0

S319 01-Mar-84

1 0

001 602-0048 1 B ASSY, LISA DRIVE CARRIER, LISA 2

\*\* \*\* EA

1

J092 01-Mar-84

1 0

002 946-0001 1 C TAPE, SEALING GLASS WEB# 341

EX X 7 P B P RL

0.0080

474 01-Mar-84

1 0

003 825-0317 A LABEL, FRAGILE, PROFILE

EX P 7 \* P EA

4

P112 01-Mar-84

1 0

004 665-93176 1 A LISA 2/10 HDA EXCHANGED

\*\* \*\* EA

0

S319 01-Mar-84

1 0

SUB.P/N ITEM 5

005 620-9133 1 A ASSY,HARD DISK,LISA 2/10,SERVICE

\*\* \*\* EA

1

B516 01-Mar-84

1 0

SUB.P/N ITEM 4

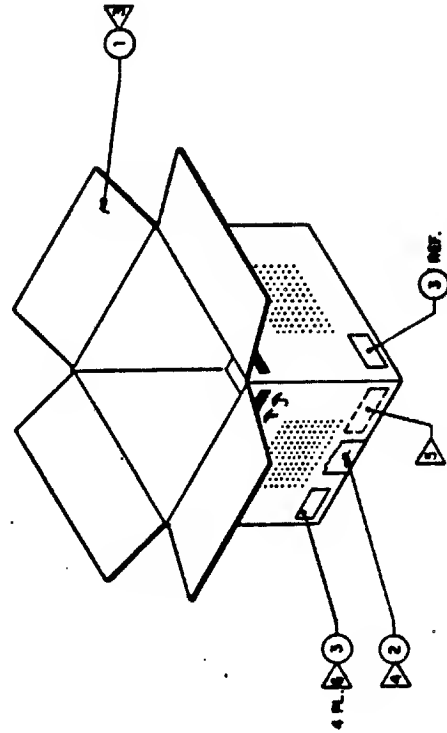
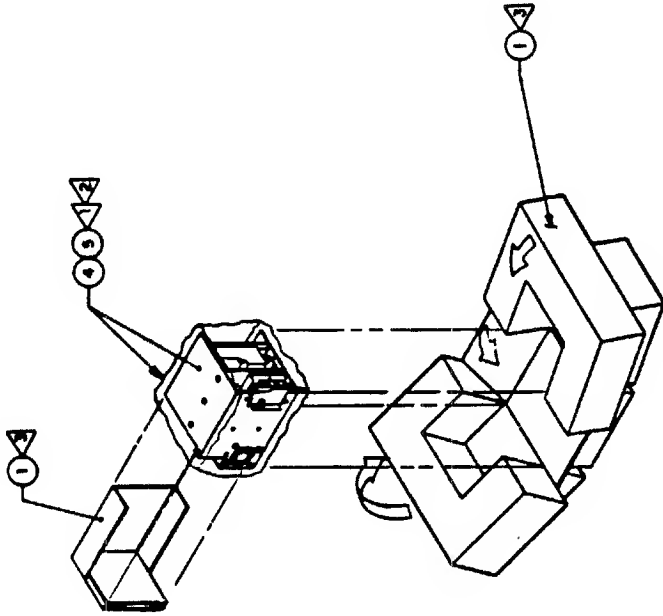
NOTES:

ECO S319:INITIAL RELEASE

END OF REPORT

NOTE: INCLUDE OTHERS WHEN SHIPPED

- 1 ITEMS 4 AND 5 ARE SUBSTITUTE PART NUMBERS. REFERENCE BILL OF MATERIAL FOR PROPER ASSEMBLY TO BE SHIPPED.
- 2 PLACE HARD DISK ASSY. (ITEM 4 OR 5) IN BAG. (BAG INCLUDED WITH ITEM 4 OR 5).
- 3 CARRIER, COLLAR AND SPACER ARE INCLUDED IN HARD DISK CARRIER ASSY. (ITEM 1).
- 4 AFTER ASSEMBLY SEAL BOX WITH TAPE (ITEM 2) STAMP OR LABEL END OF BOX WITH ASSEMBLY TITLE, PART NUMBER AND REVISION LEVEL.
- 5 APPLY LABEL ON ALL FOUR SIDES OF BOX.



ITEM	DESCRIPTION	QUANTITY	UNIT
1	DISK CARRIER ASSY.	1	EA
2	DISK CARRIER ASSY.	1	EA
3	DISK CARRIER ASSY.	1	EA
4	DISK CARRIER ASSY.	1	EA
5	DISK CARRIER ASSY.	1	EA

SEE SEPARATE BILL OF MATERIAL: 641-19176	
1	DISK CARRIER ASSY.
2	DISK CARRIER ASSY.
3	DISK CARRIER ASSY.
4	DISK CARRIER ASSY.
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97	DISK CARRIER ASSY.
98	DISK CARRIER ASSY.
99	DISK CARRIER ASSY.
100	DISK CARRIER ASSY.

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700012 END OF LIST \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1446  
XPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 620-9133	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED	--EFFECTIVITY-- F		E
	DESCRIPTION	MOD TYP FROM THRU Q QTY PER ASSY UOM X		
001 805-4052	CARRIER, DISK DRIV ME	D 032684 123199 N	1.000	EA Y
002 805-4054	CARRIER SHELF, WID ME	D 032684 123199 N	1.000	EA Y
003 677-8000	ASSY.,FINAL,WIDGET ME	D 032684 123199 N	1.000	EA Y
004 720-0501	FAN,3 1/8" ME	D 032684 123199 N	1.000	EA
005 591-0017	CABLE ASSY, SONY E ME	D 032684 123199 N	1.000	EA Y
006 830-0028	CLIP,CABLE,ADH BAC ME	D 032684 123199 N	1.000	EA
007 830-0027	CLIP,CABLE,ADH BAC ME	D 032684 123199 N	1.000	EA
008 400-3604	SCR 6-32X1/4 FLT H ME	D 032684 123199 N	6.000	EA
009 406-1620	SCREW 6-32X1 1/4 P ME	D 020585 123199 N	3.000	EA
010 400-1604	SCR 6-32X1/4 PN HD ME	D 032684 123199 N	4.000	EA
011 860-0251	WASHER, INT TOOTH ME	D 032684 123199 N	3.000	EA
012 860-0252	WASHER, INT TOOTH ME	D 032684 123199 N	2.000	EA

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE \*\*

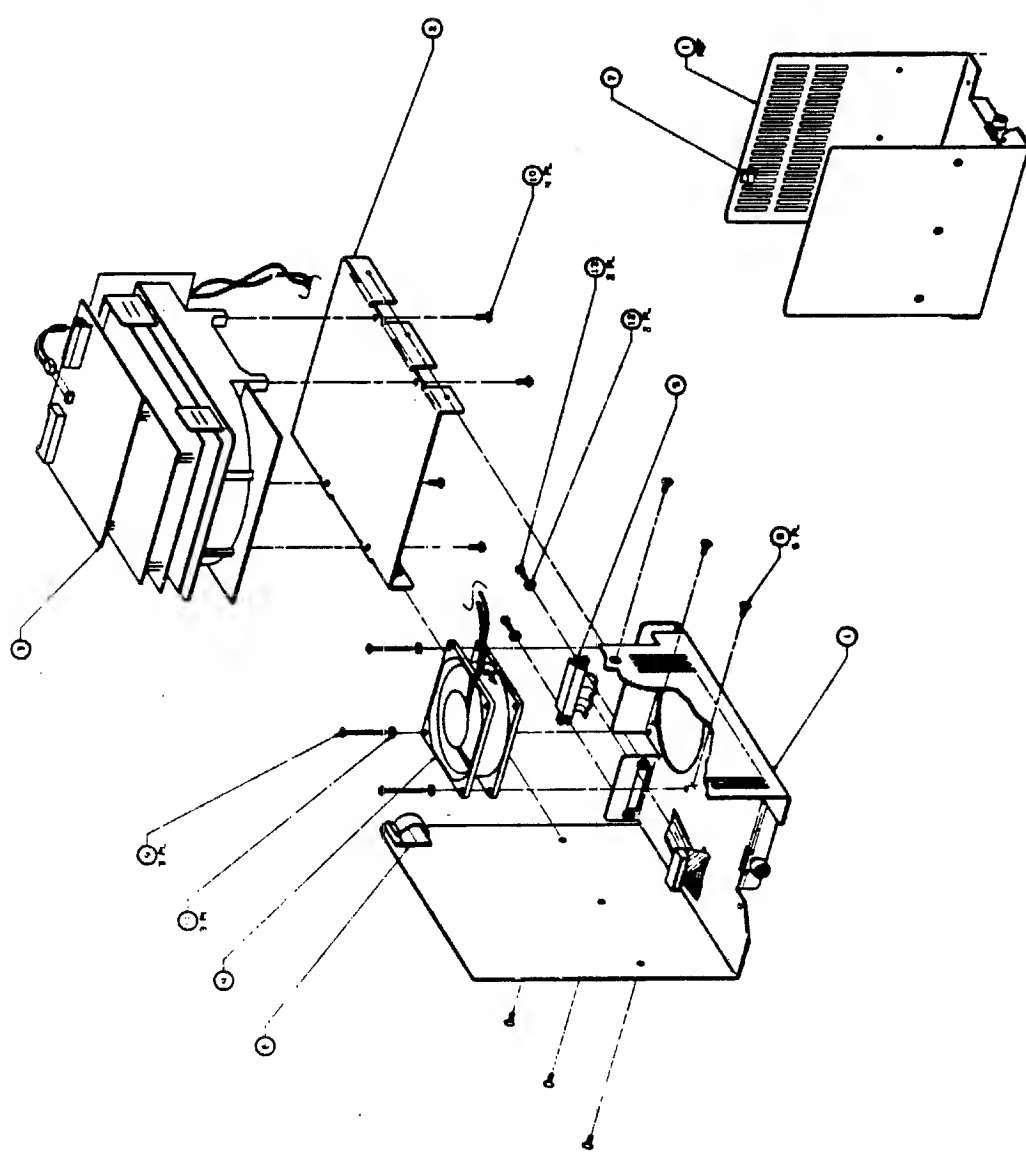
ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1447  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 620-9133	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED	--EFFECTIVITY-- F		E
	DESCRIPTION	MOD TYP FROM THRU Q QTY PER ASSY UOM X		
013 400-1406	SCR 4-40X3/8 PN HD ME	D 032684 123199 N	2.000	EA
014 944-0212	BAG,ANTI-STAT POLY ME	D 032684 123199 N	1.000	EA

END

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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INITIAL RELEASE	
DATE	TIME
BY	
FOR	
REMARKS	



CLIP-ON DETAIL

100-1112-1

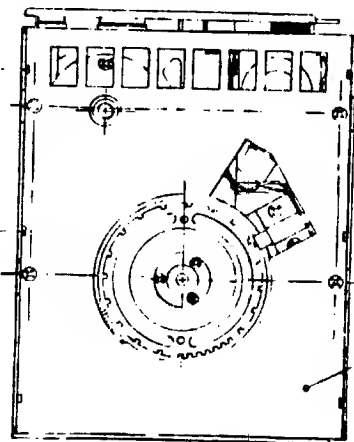
```
ABMDISP1      CULLINET MANUFACTURING SYSTEM - GAMMA 1.1      08/15/85  1445
EXPLOD1      PART COMPONENTS EXPL INQ - 1                    01PMH      STEP
```

ASSY	677-8000	EFF: DATE	SER NO	LOT NO
PLT	MODEL	SEQ(I,C) I	SKIP TO ITEM/COMPONENT	
ITM	COMPONENT	ABBREVIATED	DESCRIPTION	MOD
001	677-7000	ASSY,FINAL,WIDGET	ME	D 121983 123199 N
002	677-4108	ASSY,PCB,TSTD LISA	ME	D 013184 123199 N
003	590-0207	ASSY,CA,INTCON,IDC	ME	D 121983 123199 N
004	400-1607	SCR 6-32X7/16 PN H	ME	D 121983 123199 N
005	677-0108	ASSY,PCB,UNTSTD LI	ME	D 010101 013084 N
006	400-1603	SCR 6-32X3/16 PN H	ME	D 013184 123199 N
007	805-4054	CARRIER SHELF, WID	ME	D 013184 123199 N
008	677-4110	ASSY,PCB,TSTD LISA	ME	D 051484 123199 N
009	590-0222	CABLE ASSY,MTHR BD	ME	D 071984 123199 N
010	677-9110	ASSY,PCB,T&BI,LISA	ME	D 101084 123199 N

EXPLOSION LEVEL : 1

















NEXT RESPONSE : EXPLOD1    NEXT KEY :  
DC700012 END OF LIST               \*\*

1. TORQUE SCREWS (ITEMS 1, 2, 3) TO 40 IN.-LB.
2. CONNECT CABLE ASSEMBLY (ITEM 3 OR 9) TO CONTROLLER BOARD, CONNECTOR J3 AND MOTHER BOARD, CONNECTOR J3. CABLE TO BE ROUTED AS SHOWN.
3. SHEET 1 DEPICTS WIDGET ASSY. USING 4-LAYER LISA CONTROLLER PCB (ITEM 2).
4. SHEET 2 DEPICTS WIDGET ASSY. USING 2-LAYER LISA CONTROLLER PCB (ITEM 3 OR 10).
5. LISA / WIDGET CONTROLLER PCB'S AND CABLES ARE TO BE USED AS FOLLOWS:
  - A. ITEMS 2 AND 8 ARE ALTERNATES FOR ITEM 1.
  - B. ITEM 3 MUST BE USED WHEN ITEM 2 IS INSTALLED.
  - C. ITEM 9 MUST BE USED WHEN EITHER ITEM 2 OR 10 IS INSTALLED.



709  
(19)

5 4-LAYER CONTROLLER ASSY

 <b>METRIC</b> SI UNITS MILLIMETERS METERS	 <b>IMPERIAL</b> INCHES FEET	 <b>METRIC</b> SI UNITS MILLIMETERS METERS	 <b>IMPERIAL</b> INCHES FEET
 <b>METRIC</b> SI UNITS MILLIMETERS METERS	 <b>IMPERIAL</b> INCHES FEET	 <b>METRIC</b> SI UNITS MILLIMETERS METERS	 <b>IMPERIAL</b> INCHES FEET
 <b>METRIC</b> SI UNITS MILLIMETERS METERS	 <b>IMPERIAL</b> INCHES FEET	 <b>METRIC</b> SI UNITS MILLIMETERS METERS	 <b>IMPERIAL</b> INCHES FEET
 <b>METRIC</b> SI UNITS MILLIMETERS METERS	 <b>IMPERIAL</b> INCHES FEET	 <b>METRIC</b> SI UNITS MILLIMETERS METERS	 <b>IMPERIAL</b> INCHES FEET

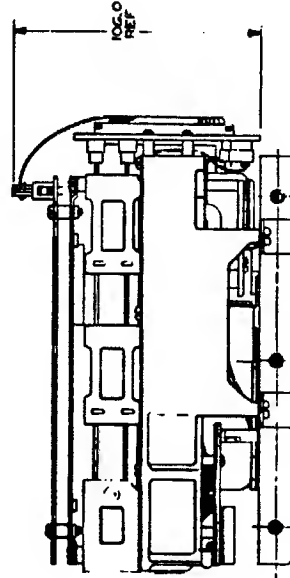
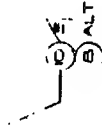
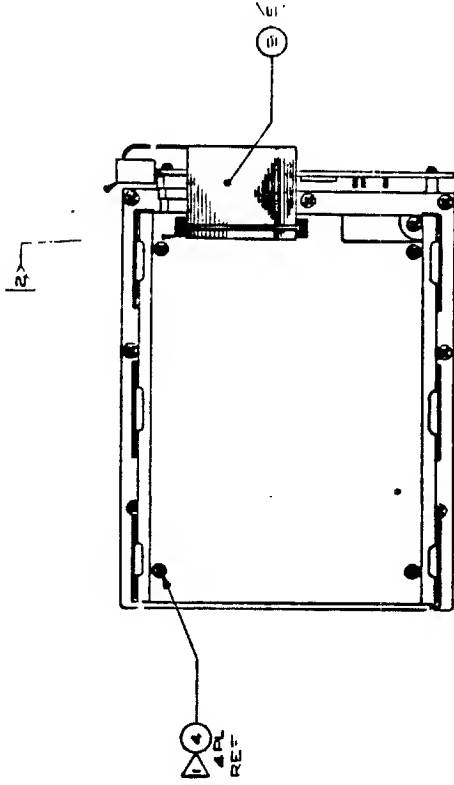
SEP 19 1942

11

1000

SEP 19 1942

NOTE: UNLESS OTHERWISE SPECIFIED



METRIC		IMPERIAL	
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
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53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100
widget computer inc. 12345 MAIN STREET WIDGET, USA		ASSEMBLY WIDGET, USA	
FULL		000-B 2/2	



EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700012 END OF LIST \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0915  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-7000	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED	MOD TYP FROM THRU Q	QTY PER ASSY UOM	E
001 677-6000	ASSY,HEAD/DISK,WID ME	D 121983 123199 N	1.000 EA	Y
002 677-0103	ASSY,PCB,UNTSTD,MO ME	D 121983 013084 N	0.000 EA	Y
003 677-4105	ASSY,PCB,TSTD SERV ME	D 013184 123199 N	0.000 EA	Y
004 677-4104	ASSY,PCB,TSTD READ ME	D 013184 123199 N	0.000 EA	Y
005 677-0102	ASY,UNTSTD,MOTOR C ME	D 010101 013084 N	0.000 EA	Y
006 830-0056	MOUNT,CABLE TIE,AD ME	D 121983 013084 N	0.000 EA	
007 805-5027	SHLD W/FLNGE,MTHR ME	D 121983 123199 N	1.000 EA	
008 725-0012	INSULATOR,MYLAR,.0 ME	D 121983 123199 N	1.000 EA	
009 860-0320	SHIELD-ISOLATION,M ME	D 121983 013084 N	0.000 EA	
010 590-0204	CABLE ASSY,AWG.22, ME	D 121983 013084 N	0.000 EA	Y
011 918-0104	TORQUE SEAL, BLUE, ME	D 121983 013084 N	0.000 EA	
012 400-1604	SCR 6-32X1/4 PN HD ME	D 121983 123199 N	3.000 EA	

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0916  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-7000	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED	MOD TYP FROM THRU Q	QTY PER ASSY UOM	E
013 830-0027	CLIP,CABLE,ADH BAC ME	D 121983 013084 N	0.000 EA	
014 830-0031	TIE WRAP, 3.000LG ME	D 121983 013084 N	0.000 EA	
015 699-5007	SHIELD,SERVO BD.,W ME	D 121983 123199 N	1.000 EA	
016 400-1404	SCR 4-40X1/4 PN HD ME	D 121983 123199 N	2.000 EA	
017 677-0105	ASSY,PCB,UNTSTD,SE ME	D 010101 013084 N	0.000 EA	Y
018 677-0104	ASSY,PCB,UNTSTD,RE ME	D 010101 013084 N	0.000 EA	Y
019 805-5034	RETAINER,PCB WIDG ME	D 060184 123199 N	1.000 EA	
020 677-4109	ASSY,PCB,TSTD,SERV ME	D 070584 123199 N	0.000 EA	Y
021 407-0404	SCR 4-40X1/4 BTN H ME	D 060184 123199 N	1.000 EA	
022 677-9104	ASSY,PCB,T&BI,R/W ME	D 101084 123199 N	1.000 EA	Y
023 677-9109	ASSY,PCB,T&BI,SERV ME	D 101084 123199 N	1.000 EA	Y

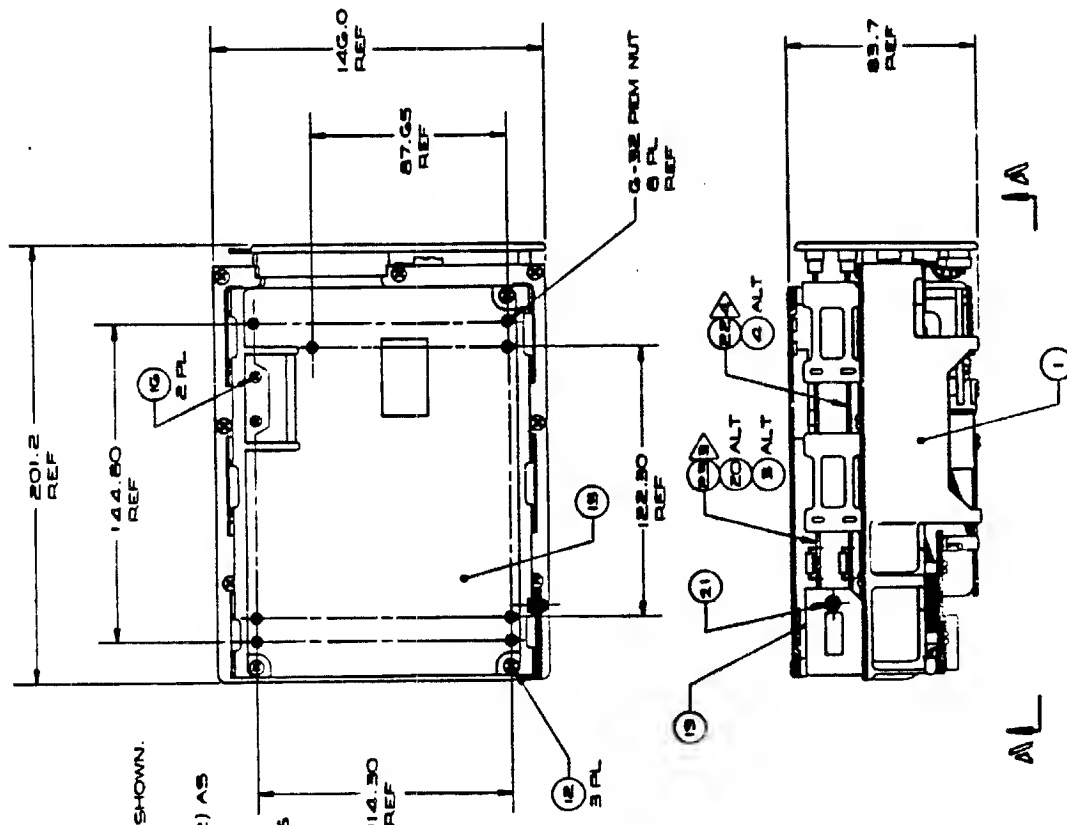
EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700012 END OF LIST \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0916  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH ST

NOTE: UNLESS OTHERWISE SPECIFIED

1. FOR UNSPECIFIED MECHANICAL AND ELECTRICAL REQUIREMENTS, REFER TO WIDGET SPECIFICATION 048-6001.
2. UNLESS OTHERWISE SPECIFIED, TORQUE ALL SCREWS TO 10 IN/LBS.
3. LOCATE SERVO BOARD (ITEM 3, 20 OR 23) AS SHOWN. BOARD MUST MATE WITH MOTHER BOARD, CONNECTOR J1.
4. LOCATE READ/WRITE BOARD (ITEM 4 OR 22) AS SHOWN. BOARD MUST MATE WITH MOTHER BOARD, CONNECTOR J2.
5. PRIOR TO INSTALLATION OF SHIELD (ITEM 7) AND INSULATOR (ITEM 8), REMOVE 2 SCREWS FROM HEAD/DISK ASSEMBLY IN LOCATION SHOWN. USE THESE SCREWS TO ASSEMBLE SHIELD AND INSULATOR AS SHOWN.



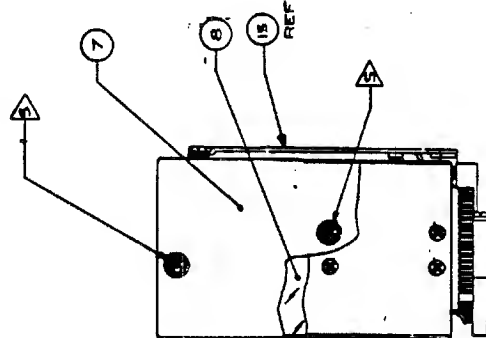
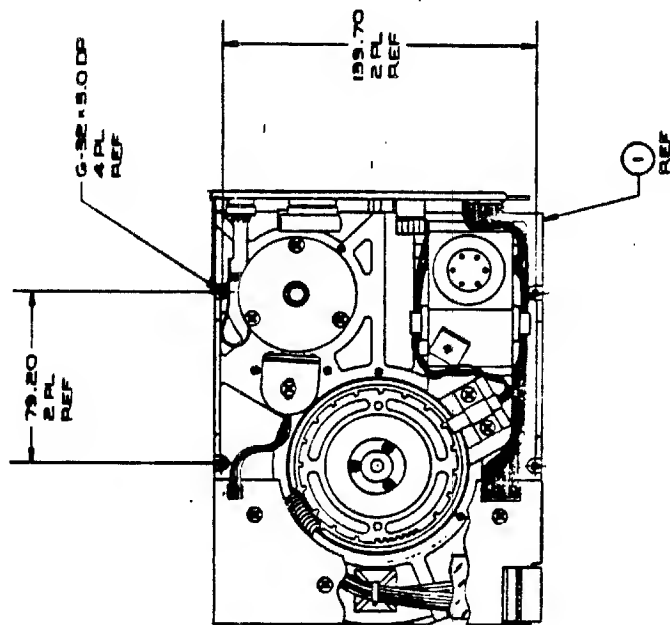
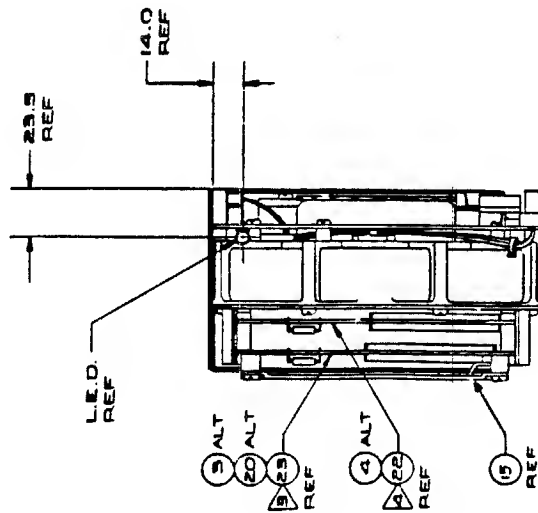
REV	DATE	DESCRIPTION	BY	CHKD
A	1005	INITIAL RELEASE (SK-W213-01)		
B	0720	DELETED NOTES 5 THRU 15 ITEMS 2, 3, 11, 12, 13 AND 14		
C	0720	REMOVED PICTURE OF SPRING RETAINER, SPL. ADDED ITEMS 19 & 21. REMOVED PICTURE OF APPLE COMPUTER SERIAL CABLE. ADDED NOTE 5		
D	0720	REMOVED PICTURE OF SPRING RETAINER, SPL. ADDED ITEMS 19 & 21. REMOVED PICTURE OF APPLE COMPUTER SERIAL CABLE. ADDED NOTE 5		
E	0720	ADDED ITEM 20 AS AN ALT PIN FOR ITEMS 19, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100		

SEE SEPARATE BILL OF MATERIALS 677-7000

METRIC		INCHES	
SCALE		SCALE	
UNIT		UNIT	
TOLERANCE		TOLERANCE	
MATERIAL		MATERIAL	
FINISH		FINISH	
ASSEMBLY		ASSEMBLY	
FINAL WIDGET		FINAL WIDGET	
PART NO.		PART NO.	
REV		REV	
DATE		DATE	
BY		BY	
CHKD		CHKD	
APP		APP	
TITLE		TITLE	
677-7000-C		677-7000-C	
1/2		1/2	

NOTE: IN ALL OTHER VIEWS SHOWN

SEE SHEET 1



VIEW A-A

577-7000-CE

Metric		Inch	
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
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49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
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89	90	91	92
93	94	95	96
97	98	99	100

577-7000-CE

ASSEMBLY,

FINAL, WIDGET

577-7000-CE

2/2

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1144  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-6000	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
TM COMPONENT	ABBREVIATED	--EFFECTIVITY-- F		E
	DESCRIPTION MOD TYP FROM THRU Q	QTY PER ASSY	UOM	X
25 699-0207	SPINDLEMOTOR ASSY, ME D 013184 123199 N	1.000	EA	
026 699-5004	ASSY, INDEX SENSOR ME D 013184 123199 N	1.000	EA	
027 815-5028	FILTER, BREATHER, ME D 013184 123199 N	1.000	EA	
028 830-0091	PIN, SCALE, ALIGNMEN ME D 013184 112584 N	2.000	EA	
029 699-5002	ASSY, BRAKE, WIDGET ME D 013184 123199 N	1.000	EA	
030 699-5006	ASSY., ACTUATOR MOT ME D 013184 123199 N	1.000	EA	
031 805-5021	FILTER, RECIRCULATI ME D 013184 123199 N	1.000	EA	
032 860-0110	SPACER, .117LX.315I ME D 013184 123199 N	1.000	EA	
033 677-4102	ASSY, PCB, TSTD MOTO ME D 013184 123199 N	1.000	EA	Y
034 677-0103	ASSY, PCB, UNTSTD, MO ME D 013184 123199 N	1.000	EA	Y
035 800-5030	COUNTERWEIGHT, ARM, ME D 013184 123199 N	0.000	EA	
036 590-0204	CABLE ASSY, AWG.22, ME D 013184 123199 N	1.000	EA	Y
EXPLOSION LEVEL : 1				

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1145  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-6000	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED	--EFFECTIVITY-- F		E
	DESCRIPTION MOD TYP FROM THRU Q	QTY PER ASSY	UOM	X
337 677-5013	SUBASSY, ARM, WIDGET ME D 013184 123199 N	1.000	EA	Y
38 400-1614	SCR 6-32X7/8 PN HD ME D 013184 073084 N	1.000	EA	
39 907-0019	CEMENT (LOCTITE 42 ME D 013184 123199 N	0.000	OZ	
040 830-0027	CLIP, CABLE, ADH BAC ME D 013184 123199 N	1.000	EA	
041 825-5023	LABEL, SERIAL NUMBE ME D 013184 123199 N	1.000	EA	
042 830-0056	MOUNT, CABLE TIE, AD ME D 013184 123199 N	2.000	EA	
043 860-0320	SHIELD-ISOLATION, M ME D 013184 123199 N	1.000	EA	
044 830-0031	TIE WRAP, 3.800LG ME D 013184 123199 N	4.000	EA	
045 805-5027	SHLD W/FLNGE, MTHR ME D 012984 073084 N	0.000	EA	
046 725-0012	INSULATOR, MYLAR, .0 ME D 013184 073084 N	0.000	EA	
047 406-1604	SCR 6-32X1/4 PN HD ME D 013184 123199 N	4.000	EA	
048 406-1406	SCR 4-40X3/8 PN HD ME D 013184 123199 N	2.000	EA	
EXPLOSION LEVEL : 1				

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1144  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-6000	EFF: DATE	SER NO	LOT NO
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT		
ITEM COMPONENT	ABBREVIATED DESCRIPTION MOD TYP FROM THRU Q	QTY PER ASSY	UOM X
25 699-0207	SPINDLEMOTOR ASSY, ME D 013184 123199 N	1.000	EA
026 699-5004	ASSY, INDEX SENSOR ME D 013184 123199 N	1.000	EA
027 815-5028	FILTER, BREATHER, ME D 013184 123199 N	1.000	EA
028 830-0091	PIN, SCALE, ALIGNMEN ME D 013184 112584 N	2.000	EA
029 699-5002	ASSY, BRAKE, WIDGET ME D 013184 123199 N	1.000	EA
030 699-5006	ASSY., ACTUATOR MOT ME D 013184 123199 N	1.000	EA
031 805-5021	FILTER, RECIRCULATI ME D 013184 123199 N	1.000	EA
032 860-0110	SPACER, .117LX.315I ME D 013184 123199 N	1.000	EA
033 677-4102	ASSY, PCB, TSTD MOTO ME D 013184 123199 N	1.000	EA Y
034 677-0103	ASSY, PCB, UNTSTD, MO ME D 013184 123199 N	1.000	EA Y
035 800-5030	COUNTERWEIGHT, ARM, ME D 013184 123199 N	0.000	EA
036 590-0204	CABLE ASSY, AWG.22, ME D 013184 123199 N	1.000	EA Y

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1145  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-6000	EFF: DATE	SER NO	LOT NO
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT		
ITEM COMPONENT	ABBREVIATED DESCRIPTION MOD TYP FROM THRU Q	QTY PER ASSY	UOM X
037 677-5013	SUBASSY, ARM, WIDGET ME D 013184 123199 N	1.000	EA Y
38 400-1614	SCR 6-32X7/8 PN HD ME D 013184 073084 N	1.000	EA
039 907-0019	CEMENT (LOCTITE 42 ME D 013184 123199 N	0.000	OZ
040 830-0027	CLIP, CABLE, ADH BAC ME D 013184 123199 N	1.000	EA
041 825-5023	LABEL, SERIAL NUMBE ME D 013184 123199 N	1.000	EA
042 830-0056	MOUNT, CABLE TIE, AD ME D 013184 123199 N	2.000	EA
043 860-0320	SHIELD-ISOLATION, M ME D 013184 123199 N	1.000	EA
044 830-0031	TIE WRAP, 3.800LG ME D 013184 123199 N	4.000	EA
045 805-5027	SHLD W/FLNGE, MTHR ME D 012984 073084 N	0.000	EA
046 725-0012	INSULATOR, MYLAR, .0 ME D 013184 073084 N	0.000	EA
047 406-1604	SCR 6-32X1/4 PN HD ME D 013184 123199 N	4.000	EA
048 406-1406	SCR 4-40X3/8 PN HD ME D 013184 123199 N	2.000	EA

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1145 STEP  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH

ASSY 677-6000	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I	SKIP TO ITEM/COMPONENT		
ITM COMPONENT	ABBREVIATED	DESCRIPTION	MOD TYP FROM THRU	Q QTY PER ASSY UOM X
049 907-0022	ADHESIVE,SEALANT,T	ME D 013184 123199	N	0.002 EA
050 400-1603	SCR 6-32X3/16 PN H	ME D 050784 123199	N	2.000 EA
051 400-1616	SCR 6-32X1 PN CRS	ME D 073184 123199	N	1.000 EA
052 870-0076	WASHER,#6 .156 ID	ME D 073184 123199	N	2.000 EA
053 800-5082	SCALE,GLASS-WIDGET	ME D 073184 123199	N	1.000 EA
054 800-5081	BAR,SPCR,GLS SCL,M	ME D 073184 123199	N	1.000 EA
055 406-1203	SCR 2-56X3/16 PN C	ME D 073184 112584	N	0.000 EA
056 860-0640	SHIM,GLASS AMBER	ME D 073184 123199	N	0.000 EA
057 860-0641	SHIM,GLASS-RED	ME D 073184 123199	N	1.000 EA
058 860-0642	SHIM,GLASS-GREEN	ME D 073184 123199	N	1.000 EA
059 860-0643	SHIM,GLASS-TAN	ME D 073184 123199	N	1.000 EA
060 860-0644	SHIM,GLASS-BLUE	ME D 073184 123199	N	1.000 EA

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1146 STEP  
 XPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH

ASSY 677-6000	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I	SKIP TO ITEM/COMPONENT		
ITM COMPONENT	ABBREVIATED	DESCRIPTION	MOD TYP FROM THRU	Q QTY PER ASSY UOM X
061 860-0645	SHIM,GLASS-BROWN	ME D 073184 123199	N	2.000 EA
062 830-0092	PIN,GLS SCL,ALIGNM	ME D 073184 123199	N	2.000 EA
063 677-9102	ASSY,PCB,T&BI,MTR	ME D 101084 123199	N	1.000 EA Y
064 406-1204	SCR 2-56X1/4 PN CR	ME D 112684 123199	N	2.000 EA

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700012 END OF LIST \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1145  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-6000	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I	SKIP TO ITEM/COMPONENT		
ITM COMPONENT	ABBREVIATED	MOD TYP FROM THRU	Q QTY PER ASSY	UOM X
049 907-0022	ADHESIVE, SEALANT, T ME	D 013184 123199	N 0.002	EA
050 400-1603	SCR 6-32X3/16 PN H ME	D 050784 123199	N 2.000	EA
051 400-1616	SCR 6-32X1 PN CRS ME	D 073184 123199	N 1.000	EA
052 870-0076	WASHER, #6 .156 ID ME	D 073184 123199	N 2.000	EA
053 800-5082	SCALE, GLASS-WIDGET ME	D 073184 123199	N 1.000	EA
054 800-5081	BAR, SPCR, GLS SCL, M ME	D 073184 123199	N 1.000	EA
055 406-1203	SCR 2-56X3/16 PN C ME	D 073184 112584	N 0.000	EA
056 860-0640	SHIM, GLASS AMBER ME	D 073184 123199	N 0.000	EA
057 860-0641	SHIM, GLASS-RED ME	D 073184 123199	N 1.000	EA
058 860-0642	SHIM, GLASS-GREEN ME	D 073184 123199	N 1.000	EA
059 860-0643	SHIM, GLASS-TAN ME	D 073184 123199	N 1.000	EA
060 860-0644	SHIM, GLASS-BLUE ME	D 073184 123199	N 1.000	EA

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1146  
 XPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-6000	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I	SKIP TO ITEM/COMPONENT		
ITM COMPONENT	ABBREVIATED	MOD TYP FROM THRU	Q QTY PER ASSY	UOM X
061 860-0645	SHIM, GLASS-BROWN ME	D 073184 123199	N 2.000	EA
062 830-0092	PIN, GLS SCL, ALIGNM ME	D 073184 123199	N 2.000	EA
063 677-9102	ASSY, PCB, T&BI, MTR ME	D 101084 123199	N 1.000	EA Y
064 406-1204	SCR 2-56X1/4 PN CR ME	D 112684 123199	N 2.000	EA

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700012 END OF LIST \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1149  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-5013	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED	MOD TYP FROM THRU	Q QTY PER ASSY	UOM X
001 677-5014	INACTIVE,SUBASSY,U ME	D 090183 060784	N 0.000	EA Y
002 677-5015	INACTIVE,SUBASSY,L ME	D 090183 060784	N 0.000	EA Y
003 677-5009	SUBASSY,POSTION SE ME	D 090183 123199	N 0.000	EA Y
004 409-6406	SCREW, 4-40 x 3/8 ME	D 090183 123199	N 2.000	EA
005 409-6206	SCREW, 2-56 x 3/8 ME	D 090183 123199	N 2.000	EA
006 677-5012	INACTIVE,FLXCBL SU ME	D 090183 060784	N 0.000	EA Y
007 800-5024	CLIP,CABLE,WIDGET ME	D 090183 123199	N 1.000	EA
008 409-6610	SCR 6-32X5/8 HEX S ME	D 090183 123199	N 1.000	EA
009 800-0121	ARM-LOWER,MACHINE, ME	D 013184 123199	N 1.000	EA
010 800-0120	ARM-UPPER,MACHINE, ME	D 013184 123199	N 1.000	EA
011 590-0168	FLEXCABLE,DATA,WID ME	D 013184 123199	N 1.000	EA
012 699-5001	LOWER HD SUSPENSIO ME	D 013184 123199	N 1.000	EA

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1149  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-5013	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED	MOD TYP FROM THRU	Q QTY PER ASSY	UOM X
013 699-5000	UPPER HD SUSPENSIO ME	D 013184 123199	N 1.000	EA
014 515-0071	CONN,HDR,PLUG,DIP, ME	D 013184 123199	N 1.000	EA
015 677-5010	SUBASSY,LED,WIDGET ME	D 013184 123199	N 1.000	EA Y
016 677-5011	SUBASSY,SENSOR,WID ME	D 013184 123199	N 1.000	EA Y
017 699-5019	HEAD SUSPENSION AS ME	D 040484 123199	N 0.000	EA
018 699-5020	HEAD SUSPENSION AS ME	D 040484 123199	N 0.000	EA
019 800-5030	COUNTERWEIGHT,ARM, ME	D 060884 112584	N 1.000	EA
020 400-1406	SCR 4-40X3/8 PN HD ME	D 060884 112584	N 1.000	EA
021 907-0022	ADHESIVE,SEALANT,T ME	D 060884 112584	N 0.000	EA
022 907-0013	CEMENT	D 060884 112584	N 0.000	OZ

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700012 END OF LIST \*\*



ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1149  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-5013 EFF: DATE SER NO LOT NO  
 PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT

ITM	COMPONENT	ABBREVIATED	MOD	TYP	FROM	THRU	Q	QTY	PER	ASSY	UOM	X	E
001	677-5014	INACTIVE,SUBASSY,U	ME	D	090183	060784	N		0.000	EA	Y		
002	677-5015	INACTIVE,SUBASSY,L	ME	D	090183	060784	N		0.000	EA	Y		
003	677-5009	SUBASSY,POSTION SE	ME	D	090183	123199	N		0.000	EA	Y		
004	409-6406	SCREW, 4-40 x 3/8	ME	D	090183	123199	N		2.000	EA			
005	409-6206	SCREW, 2-56 x 3/8	ME	D	090183	123199	N		2.000	EA			
006	677-5012	INACTIVE,FLXCBL SU	ME	D	090183	060784	N		0.000	EA	Y		
007	800-5024	CLIP,CABLE,WIDGET	ME	D	090183	123199	N		1.000	EA			
008	409-6610	SCR 6-32X5/8 HEX S	ME	D	090183	123199	N		1.000	EA			
009	800-0121	ARM-LOWER,MACHINE,	ME	D	013184	123199	N		1.000	EA			
010	800-0120	ARM-UPPER,MACHINE,	ME	D	013184	123199	N		1.000	EA			
011	590-0168	FLEXCABLE,DATA,WID	ME	D	013184	123199	N		1.000	EA			
012	699-5001	LOWER HD SUSPENSIO	ME	D	013184	123199	N		1.000	EA			

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 C700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1149  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-5013 EFF: DATE SER NO LOT NO  
 PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT

ITM	COMPONENT	ABBREVIATED	MOD	TYP	FROM	THRU	Q	QTY	PER	ASSY	UOM	X	E
013	699-5000	UPPER HD SUSPENSIO	ME	D	013184	123199	N		1.000	EA			
014	515-0071	CONN,HDR,PLUG,DIP,	ME	D	013184	123199	N		1.000	EA			
015	677-5010	SUBASSY,LED,WIDGET	ME	D	013184	123199	N		1.000	EA	Y		
016	677-5011	SUBASSY,SENSOR,WID	ME	D	013184	123199	N		1.000	EA	Y		
017	699-5019	HEAD SUSPENSION AS	ME	D	040484	123199	N		0.000	EA			
018	699-5020	HEAD SUSPENSION AS	ME	D	040484	123199	N		0.000	EA			
019	800-5030	COUNTERWEIGHT,ARM,	ME	D	060884	112584	N		1.000	EA			
020	400-1406	SCR 4-40X3/8 PN HD	ME	D	060884	112584	N		1.000	EA			
021	907-0022	ADHESIVE,SEALANT,T	ME	D	060884	112584	N		0.000	EA			
022	907-0013	CEMENT	ME	D	060884	112584	N		0.000	OZ			

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700012 END OF LIST \*\*

I ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1143  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-6000	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED	--EFFECTIVITY-- F		E
	DESCRIPTION	MOD TYP FROM THRU Q	QTY PER ASSY UOM	X
001 677-5016	INACTIVE, SUBASSY, H ME	D 110183 050684 N	0.000 EA	Y
002 699-5003	ASSY, TOP COVER, WID ME	D 110183 123199 N	1.000 EA	
003 875-0052	GASKET, CHASSIS, W ME	D 110183 123199 N	1.000 EA	
004 699-5005	ASSY., DISK, WIDGET ME	D 110183 123199 N	1.000 EA	
005 815-5029	PLUG, COVER, WIDGE ME	D 110183 123199 N	1.000 EA	
006 875-0008	BUMPER, O-RING, WIDG ME	D 110183 123199 N	2.000 EA	
007 875-0009	O-RING, CRASH STOP ME	D 110183 123199 N	2.000 EA	
008 815-5030	SCALE, METAL, WIDG ME	D 110183 112584 N	1.000 EA	
009 815-5031	CLAMP, DISK, WIDGET ME	D 110183 123199 N	1.000 EA	
010 805-5020	CLAMP, METAL SCALE ME	D 110183 112584 N	2.000 EA	
011 400-1604	SCR 6-32X1/4 PN HD ME	D 110183 123199 N	17.000 EA	
012 406-1207	SCR 2-56X7/16 PN H ME	D 110183 112584 N	3.000 EA	

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1144  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-6000	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
TM COMPONENT	ABBREVIATED	--EFFECTIVITY-- F		E
	DESCRIPTION	MOD TYP FROM THRU Q	QTY PER ASSY UOM	X
013 406-1605	SCR 6-32X5/16 PN H ME	D 110183 123199 N	9.000 EA	
014 825-5021	LABEL, WARRANTY WA ME	D 110183 123199 N	1.000 EA	
015 860-0430	SHIM, PLASTIC SCALE ME	D 110183 112584 N	1.000 EA	
016 860-0431	SHIM, PLASTIC SCALE ME	D 110183 112584 N	1.000 EA	
017 860-0432	SHIM, PLASTIC SCALE ME	D 110183 112584 N	1.000 EA	
018 860-0433	SHIM, PLASTIC SCALE ME	D 110183 112584 N	1.000 EA	
019 860-0434	SHIM, PLASTIC SCALE ME	D 110183 112584 N	1.000 EA	
020 860-0435	SHIM, PLASTIC SCALE ME	D 110183 112584 N	1.000 EA	
021 860-0436	SHIM, PLASTIC SCALE ME	D 110183 112584 N	1.000 EA	
022 918-0104	TORQUE SEAL, BLUE, ME	D 110183 123199 N	0.100 EA	
023 800-5027	CHASSIS, MACHINED, ME	D 013184 123199 N	1.000 EA	
024 805-5023	CLAMP, INDEX SENSO ME	D 013184 123199 N	1.000 EA	

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700011 MORE \*\*

I ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1143  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-6000	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED DESCRIPTION MOD TYP FROM THRU Q		QTY PER ASSY	UOM X
001 677-5016	INACTIVE,SUBASSY,H ME D 110183 050684 N		0.000	EA Y
002 699-5003	ASSY, TOP COVER, WID ME D 110183 123199 N		1.000	EA
003 875-0052	GASKET, CHASSIS, W ME D 110183 123199 N		1.000	EA
004 699-5005	ASSY., DISK, WIDGET ME D 110183 123199 N		1.000	EA
005 815-5029	PLUG, COVER, WIDGE ME D 110183 123199 N		1.000	EA
006 875-0008	BUMPER, O-RING, WIDG ME D 110183 123199 N		2.000	EA
007 875-0009	O-RING, CRASH STOP ME D 110183 123199 N		2.000	EA
008 815-5030	SCALE, METAL, WIDG ME D 110183 112584 N		1.000	EA
009 815-5031	CLAMP, DISK, WIDGET ME D 110183 123199 N		1.000	EA
010 805-5020	CLAMP, METAL SCALE ME D 110183 112584 N		2.000	EA
011 400-1604	SCR 6-32X1/4 PN HD ME D 110183 123199 N		17.000	EA
012 406-1207	SCR 2-56X7/16 PN H ME D 110183 112584 N		3.000	EA

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 1144  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-6000	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED DESCRIPTION MOD TYP FROM THRU Q		QTY PER ASSY	UOM X
013 406-1605	SCR 6-32X5/16 PN H ME D 110183 123199 N		9.000	EA
014 825-5021	LABEL, WARRANTY WA ME D 110183 123199 N		1.000	EA
015 860-0430	SHIM, PLASTIC SCALE ME D 110183 112584 N		1.000	EA
016 860-0431	SHIM, PLASTIC SCALE ME D 110183 112584 N		1.000	EA
017 860-0432	SHIM, PLASTIC SCALE ME D 110183 112584 N		1.000	EA
018 860-0433	SHIM, PLASTIC SCALE ME D 110183 112584 N		1.000	EA
019 860-0434	SHIM, PLASTIC SCALE ME D 110183 112584 N		1.000	EA
020 860-0435	SHIM, PLASTIC SCALE ME D 110183 112584 N		1.000	EA
021 860-0436	SHIM, PLASTIC SCALE ME D 110183 112584 N		1.000	EA
022 918-0104	TORQUE SEAL, BLUE, ME D 110183 123199 N		0.100	EA
023 800-5027	CHASSIS, MACHINED, ME D 013184 123199 N		1.000	EA
024 805-5023	CLAMP, INDEX SENSO ME D 013184 123199 N		1.000	EA

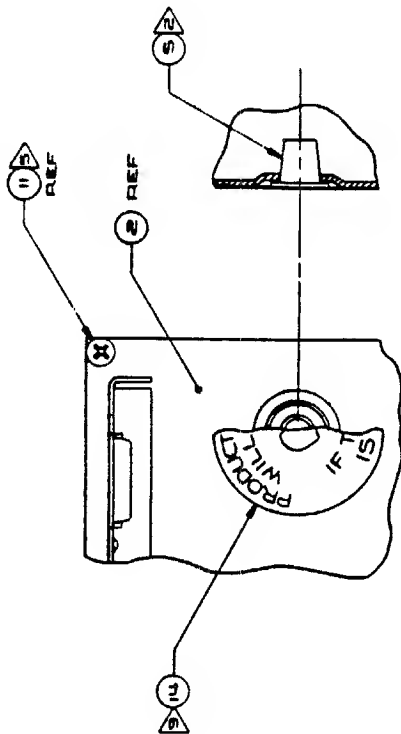
EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700011 MORE \*\*

- NOTES CONTINUED ON SHEET 3

NOTES CONTINUED ON SHEET 3

DATE	TIME	BY	REMARKS
			SEE SHEET 1



VIEW 13-13  
SCALE: 2X

[illegible]

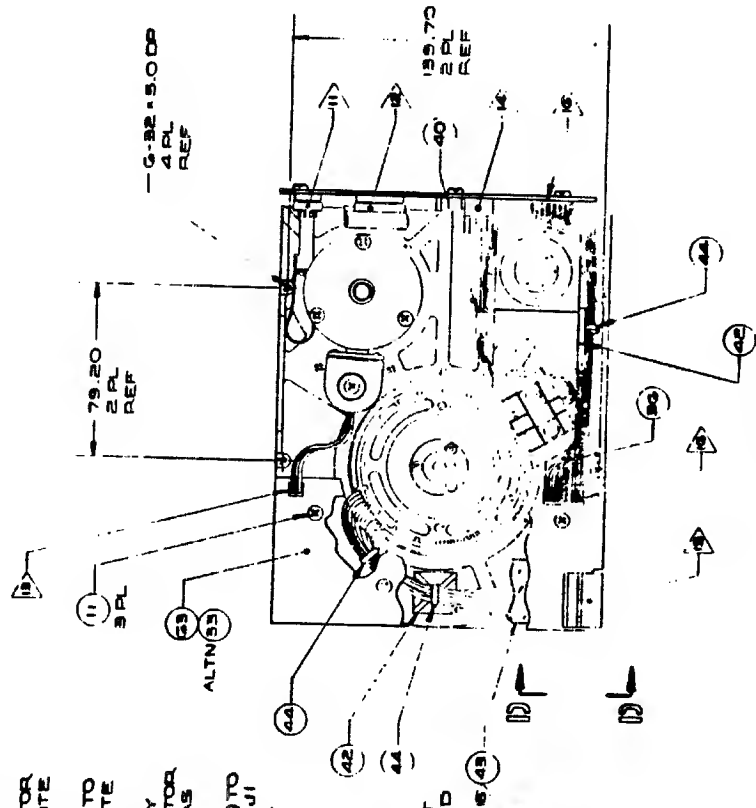
NOTE: UNLESS OTHERWISE SPECIFIED

NOTES CONTINUED FROM SHEET 1

1. CONNECT ACTUATOR MOTOR CABLE TO MOTHER BOARD, CONNECTOR J4. ROUTE CABLE APPROXIMATELY AS SHOWN.
2. CONNECT ARM ASSEMBLY CABLE TO MOTHER BOARD, CONNECTOR J5. ROUTE CABLE APPROXIMATELY AS SHOWN.
3. CONNECT BRAKE ASSEMBLY TO MOTOR CONTROL BOARD, CONNECTOR J3. ROUTE WIRES APPROXIMATELY AS SHOWN.
4. CONNECT INDEX SENSOR ASSEMBLY TO MOTHER BOARD, CONNECTOR J6. ROUTE WIRES APPROXIMATELY AS SHOWN.
5. CONNECT SPINDLE MOTOR ASSEMBLY TO MOTOR CONTROL BOARD, CONNECTOR J2. ROUTE WIRES APPROXIMATELY AS SHOWN.
6. CONNECT CABLE ASSEMBLY (ITEM 56) TO MOTOR CONTROL BOARD, CONNECTOR J1 AND MOTHER BOARD, CONNECTOR J7. ROUTE WIRES APPROXIMATELY AS SHOWN.

7. PRIOR TO ASSEMBLY, POSITION INSULATOR (ITEM 43) BETWEEN CIRCUIT SIDE OF MOTOR CONTROL BOARD AND CHASSIS AS SHOWN.

NOTES CONTINUED ON SHEET 4



VIEW C-C



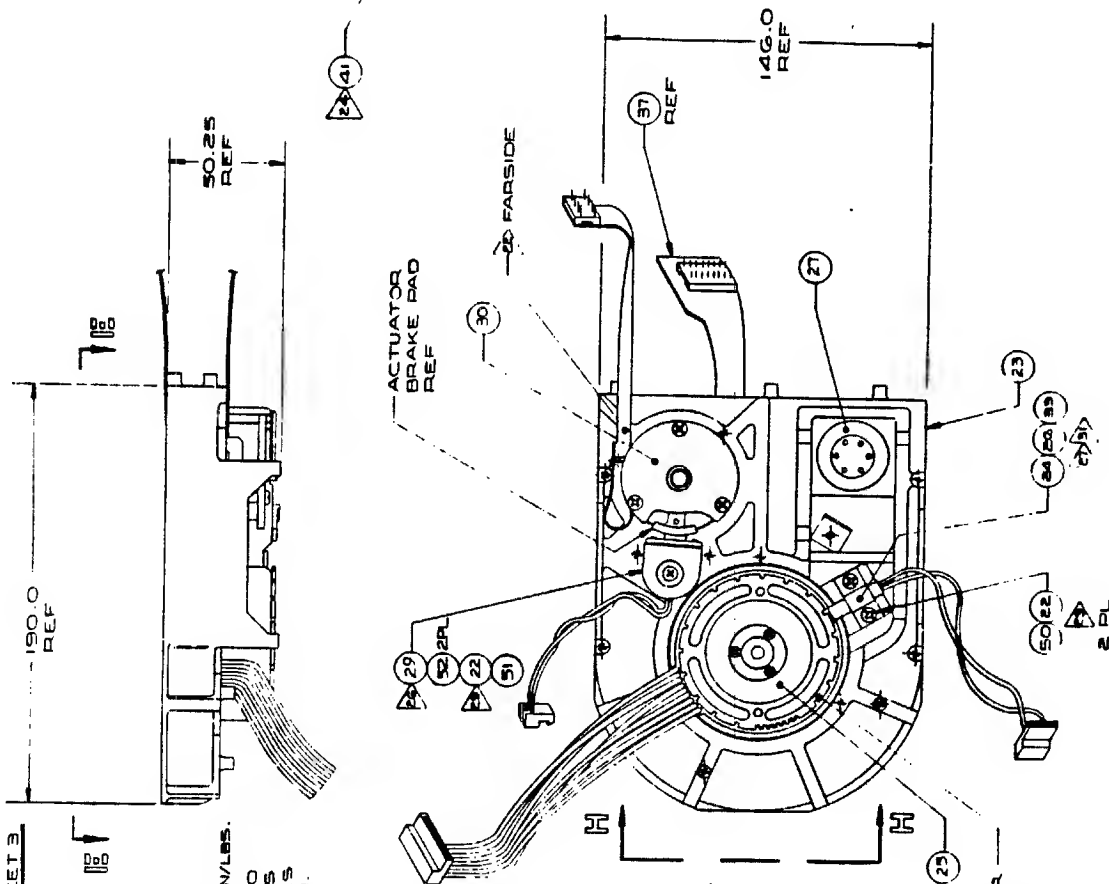
VIEW D-D

QTY	DESCRIPTION	UNIT	PRICE	TOTAL
1	HEAD/ DISK WIDGET			
1	ASSY.			
1	677-6000-E			

677-6000-E







NOTES CONTINUED FROM SHEET 3

- NOTES CONTINUED ON SHEET 6



NEW H-H  
SCALE: 2X

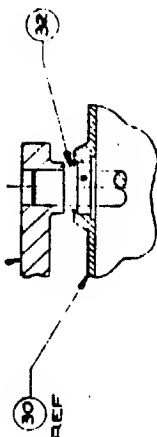
HDA SUBASSY

	METRIC		INCHES
	METRIC		INCHES
	METRIC		INCHES

NOTE: UNLESS OTHERWISE SPECIFIED

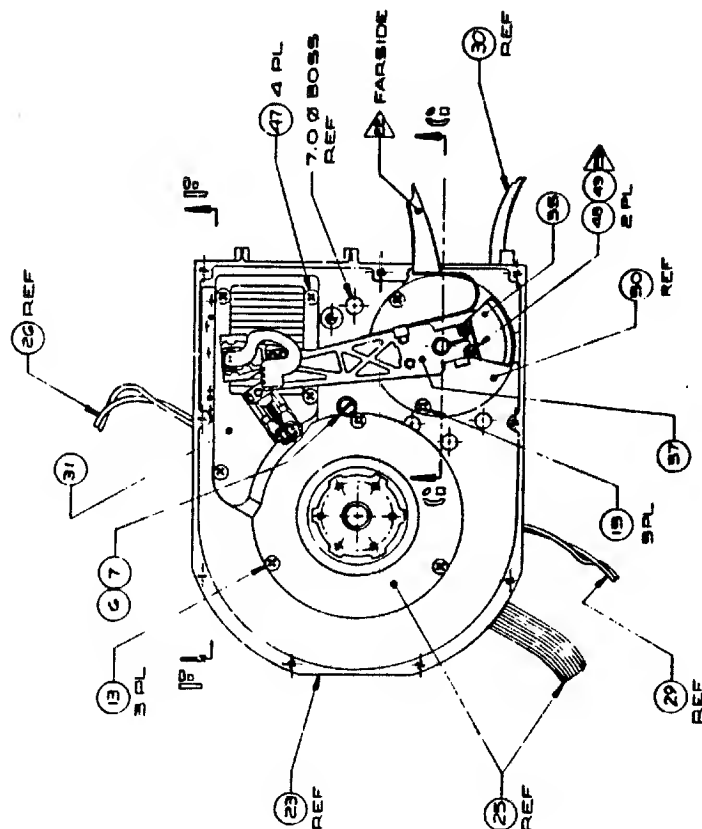
REV	DATE	BY	CHKD
1			

37 REF



ACTUATOR  
BEARINGS  
REF

SECTION 00-00  
SCALE: 2X



2D VIEW 00-00  
SCALE: FULL

HDA SUBASSY

METRIC		Imperial computer inc.	
1	1/16	1	1/16
2	1/8	2	1/8
3	3/16	3	3/16
4	1/4	4	1/4
5	5/16	5	5/16
6	3/8	6	3/8
7	7/16	7	7/16
8	1/2	8	1/2
9	9/16	9	9/16
10	5/8	10	5/8
11	3/4	11	3/4
12	7/8	12	7/8
13	1	13	1
14	1 1/8	14	1 1/8
15	1 1/4	15	1 1/4
16	1 3/8	16	1 3/8
17	1 1/2	17	1 1/2
18	1 5/8	18	1 5/8
19	1 3/4	19	1 3/4
20	1 7/8	20	1 7/8
21	2	21	2
22	2 1/8	22	2 1/8
23	2 1/4	23	2 1/4
24	2 3/8	24	2 3/8
25	2 1/2	25	2 1/2
26	2 5/8	26	2 5/8
27	2 3/4	27	2 3/4
28	2 7/8	28	2 7/8
29	3	29	3
30	3 1/8	30	3 1/8
31	3 1/4	31	3 1/4
32	3 3/8	32	3 3/8
33	3 1/2	33	3 1/2
34	3 5/8	34	3 5/8
35	3 3/4	35	3 3/4
36	3 7/8	36	3 7/8
37	4	37	4
38	4 1/8	38	4 1/8
39	4 1/4	39	4 1/4
40	4 3/8	40	4 3/8
41	4 1/2	41	4 1/2
42	4 5/8	42	4 5/8
43	4 3/4	43	4 3/4
44	4 7/8	44	4 7/8
45	5	45	5
46	5 1/8	46	5 1/8
47	5 1/4	47	5 1/4
48	5 3/8	48	5 3/8
49	5 1/2	49	5 1/2
50	5 5/8	50	5 5/8
51	5 3/4	51	5 3/4
52	5 7/8	52	5 7/8
53	6	53	6
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55	6 1/4	55	6 1/4
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57	6 1/2	57	6 1/2
58	6 5/8	58	6 5/8
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60	6 7/8	60	6 7/8
61	7	61	7
62	7 1/8	62	7 1/8
63	7 1/4	63	7 1/4
64	7 3/8	64	7 3/8
65	7 1/2	65	7 1/2
66	7 5/8	66	7 5/8
67	7 3/4	67	7 3/4
68	7 7/8	68	7 7/8
69	8	69	8
70	8 1/8	70	8 1/8
71	8 1/4	71	8 1/4
72	8 3/8	72	8 3/8
73	8 1/2	73	8 1/2
74	8 5/8	74	8 5/8
75	8 3/4	75	8 3/4
76	8 7/8	76	8 7/8
77	9	77	9
78	9 1/8	78	9 1/8
79	9 1/4	79	9 1/4
80	9 3/8	80	9 3/8
81	9 1/2	81	9 1/2
82	9 5/8	82	9 5/8
83	9 3/4	83	9 3/4
84	9 7/8	84	9 7/8
85	10	85	10
86	10 1/8	86	10 1/8
87	10 1/4	87	10 1/4
88	10 3/8	88	10 3/8
89	10 1/2	89	10 1/2
90	10 5/8	90	10 5/8
91	10 3/4	91	10 3/4
92	10 7/8	92	10 7/8
93	11	93	11
94	11 1/8	94	11 1/8
95	11 1/4	95	11 1/4
96	11 3/8	96	11 3/8
97	11 1/2	97	11 1/2
98	11 5/8	98	11 5/8
99	11 3/4	99	11 3/4
100	11 7/8	100	11 7/8

677-6000-E 5/6

NOTED

677-6000-E 3/6

ASSY

HEAD/DISK

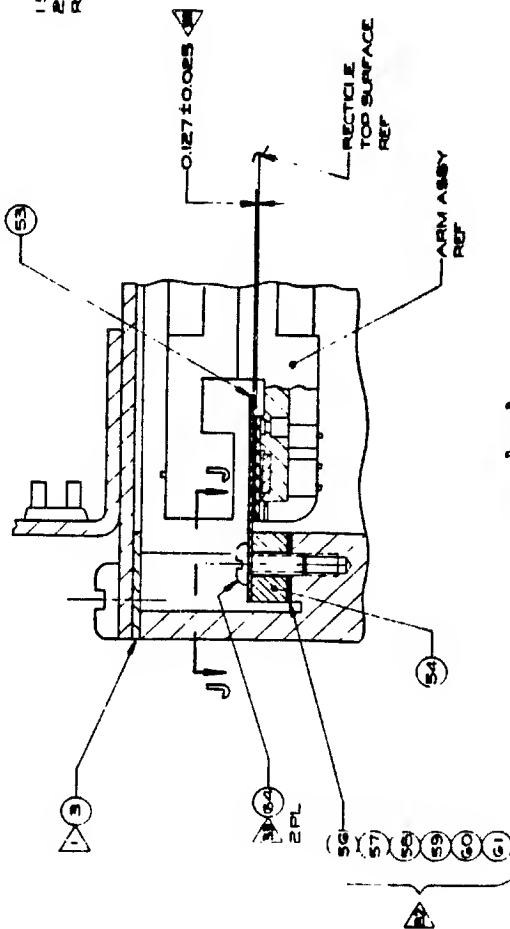
WIDSET

677-6000-E 3/6

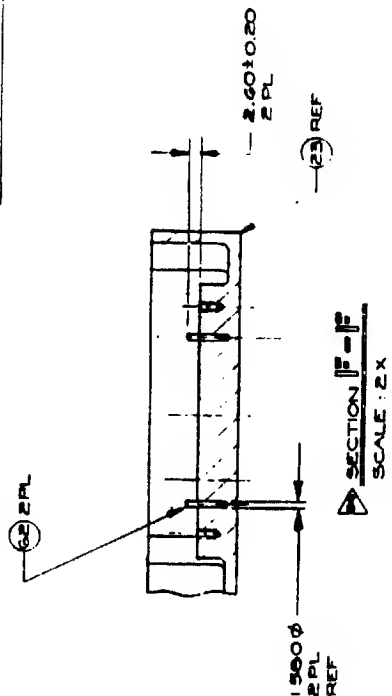


NOTE: DIMENSIONS SHOWN IN PARENTHESES

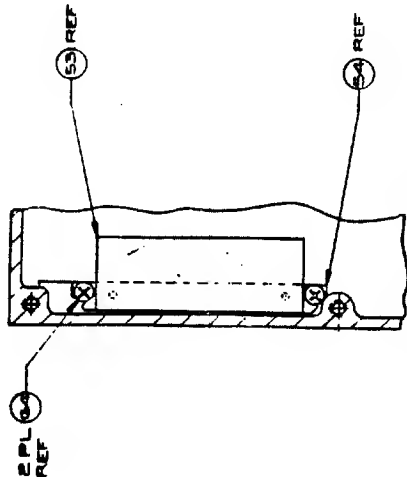
- 1. INSTALL SHIMS (ITEMS 56 THRU 61) AS REQUIRED IN LOCATION SHOWN TO ACHIEVE THE INDICATED GAP BETWEEN BOTTOM SURFACE OF SCALE (ITEM 53) AND TOP SURFACE OF RECTICLE.
- 2. TORQUE SCREWS (ITEM 64) TO 3.0 IN./LBS.
- 3. PRESS FIT ALIGNMENT PINS (ITEM 62) INTO 1.580 DIA HOLES IN CHASSIS (ITEM 23) TO INDICATED DIMENSION.



SECTION A-A  
ROTATED 90° CCW  
SCALE: 5X



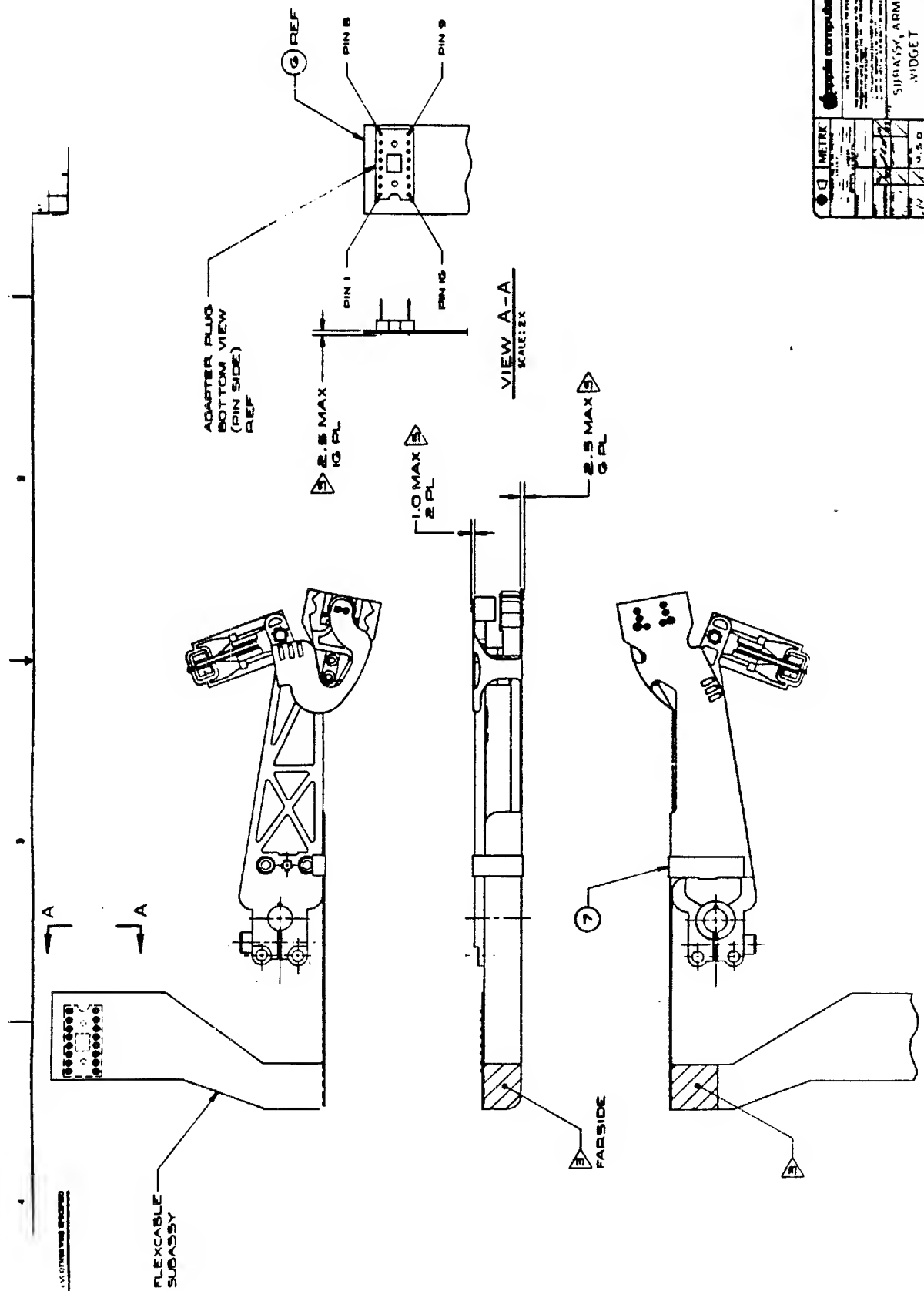
SECTION F-F  
SCALE: 2X

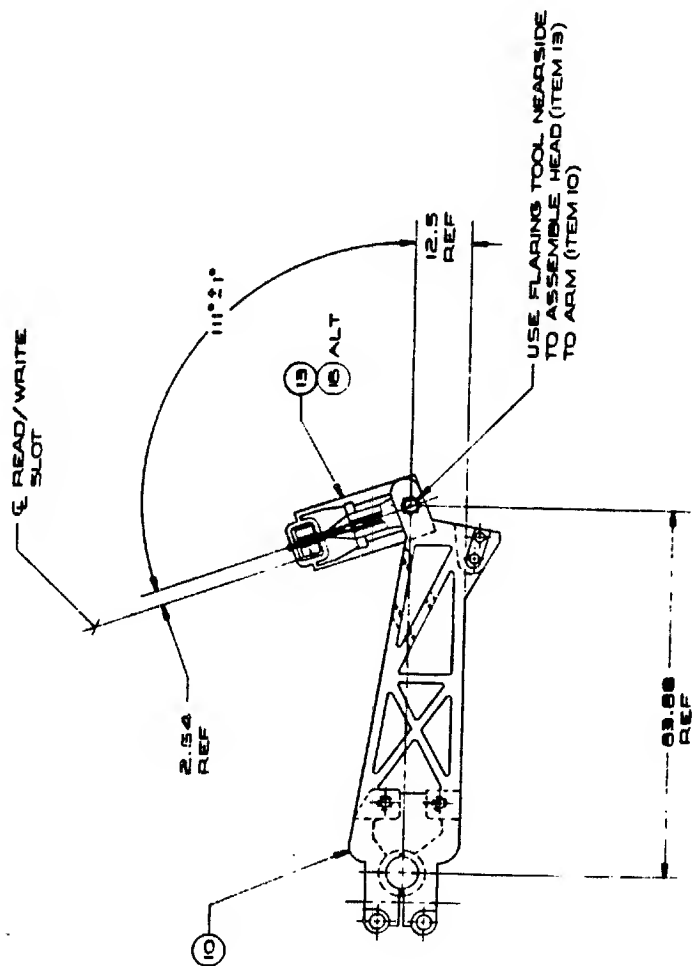


SECTION J-J  
SCALE: 2X

677-6000-E	
Q	METRIC
ASSEMBLY	
HEAD/DISK WIDGET	
NOTED	677-6000-E 5/6

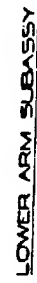


















































































































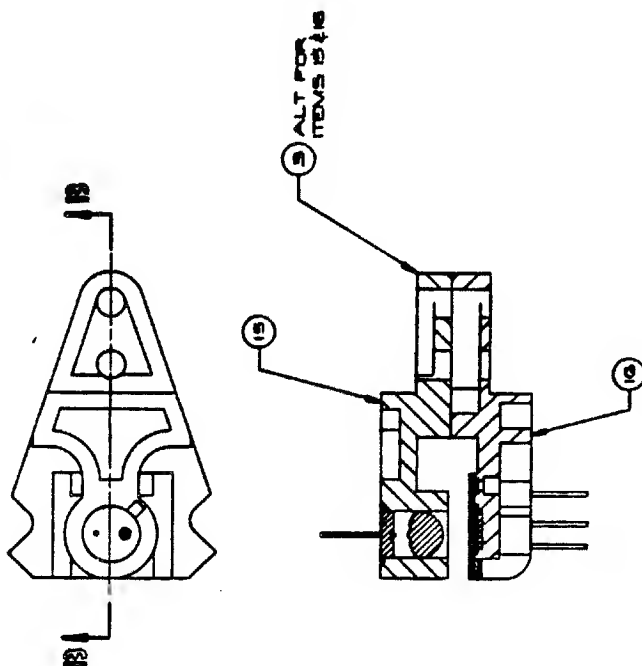
UPPER ARM SUBASSY

METRIC		SUBASSY, ARM WIDGET		677-5013-D 3/6	
1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96
97	98	99	100	101	102
103	104	105	106	107	108
109	110	111	112	113	114
115	116	117	118	119	120
121	122	123	124	125	126
127	128	129	130	131	132
133	134	135	136	137	138
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145	146	147	148	149	150
151	152	153	154	155	156
157	158	159	160	161	162
163	164	165	166	167	168
169	170	171	172	173	174
175	176	177	178	179	180
181	182	183	184	185	186
187	188	189	190	191	192
193	194	195	196	197	198
199	200	201	202	203	204
205	206	207	208	209	210
211	212	213	214	215	216
217	218	219	220	221	222
223	224	225	226	227	228
229	230	231	232	233	234
235	236	237	238	239	240
241	242	243	244	245	246
247	248	249	250	251	252
253	254	255	256	257	258
259	260	261	262	263	264
265	266	267	268	269	270
271	272	273	274	275	276
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283	284	285	286	287	288
289	290	291	292	293	294
295	296	297	298	299	300

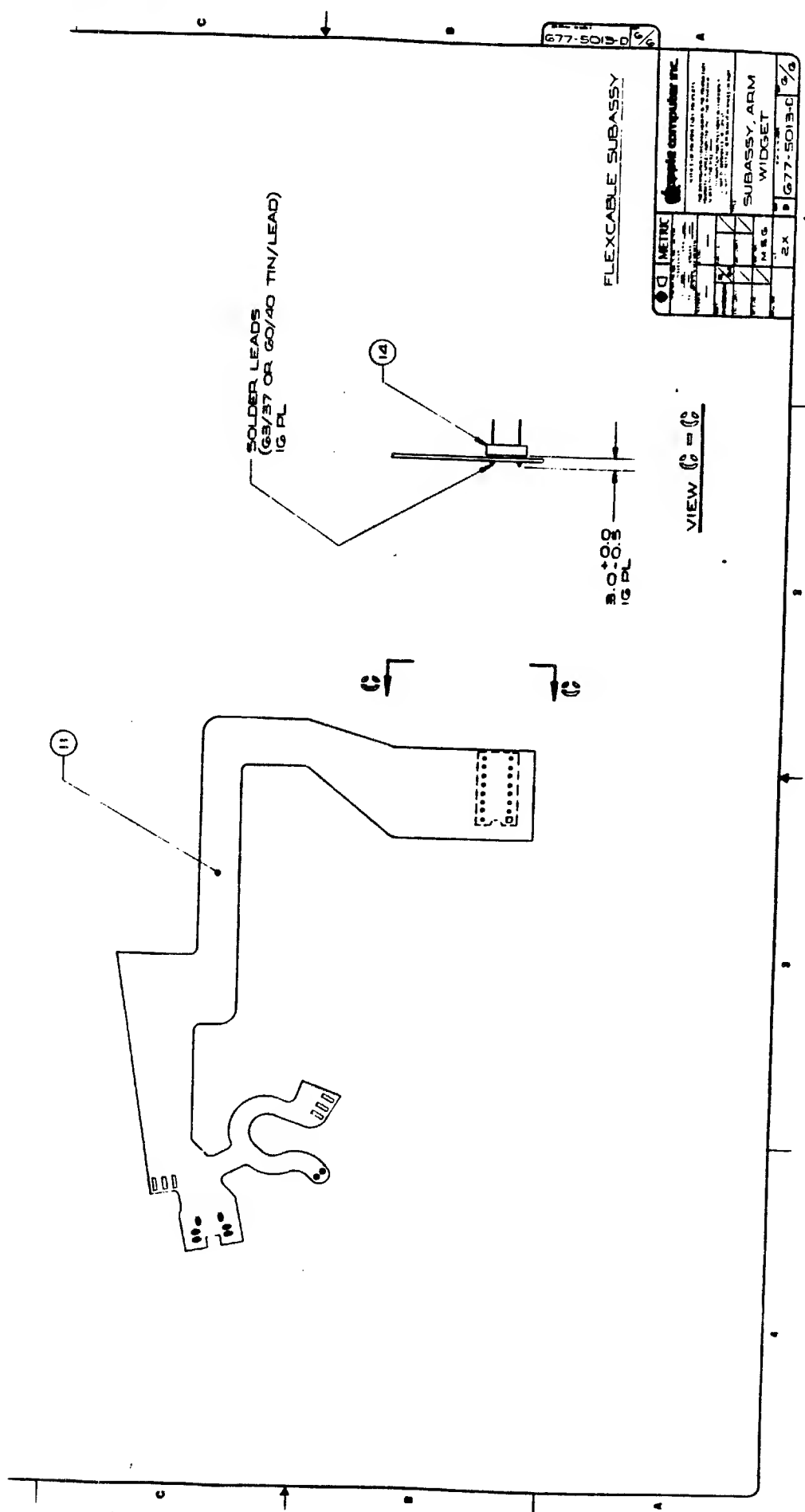


	METRIC		IMPERIAL



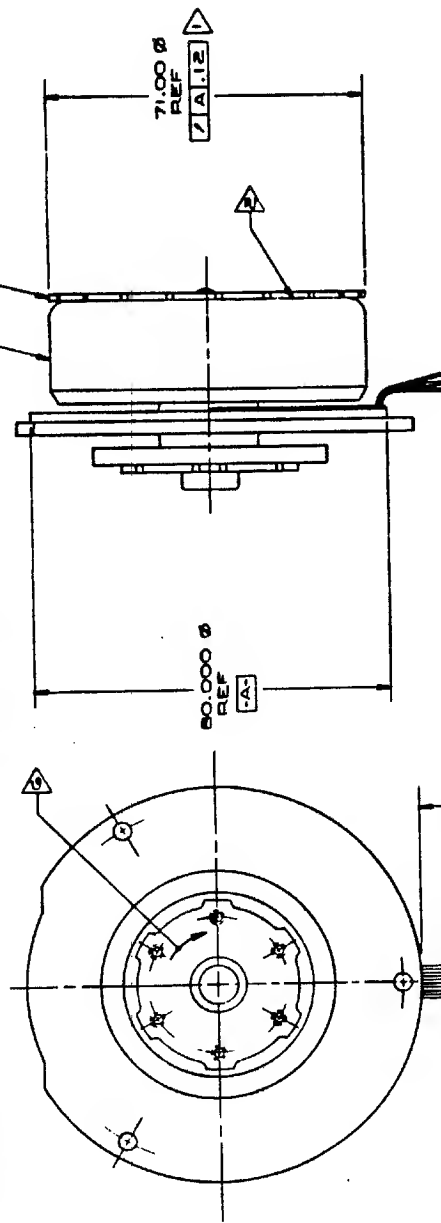
**SECTION 13 - 13**



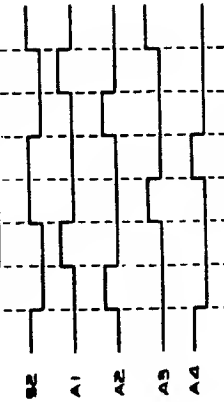
NOTE: VALUES GIVEN ARE TYPICAL

1. ORIENTATION OF SECTOR DISK (ITEM 2) TO SPINDLE MOTOR (ITEM 1) IS OPTIONAL EXCEPT AS NOTED.
2. METHOD OF ATTACHING SECTOR DISK (ITEM 2) TO SPINDLE MOTOR (ITEM 1) IS OPTIONAL. DISK MUST BE REMOVABLE AFTER ASSY.
3. SPECIFICATIONS:
  - A. NO LOAD RUNNING CURRENT AT 3200 RPM = 180 MA
  - B. 2 PLANE MAX UNBALANCE = 2.5 GM-MM.
  - C. RUNOUT:
    - REPEATABLE = LESS THAN 400  $\mu$ IN.
    - NON-REPEATABLE = LESS THAN 50  $\mu$ IN.
  - D. SPEED = 3200 RPM.
  - E. STARTING CURRENT = NO MORE THAN 750 MA.
  - F. STARTING TIME = LESS THAN 10 SEC.
4. SEE WIRING CHART FOR ROUTING REQUIREMENTS AND WIRE COLOR.

5. ORIENTATION OF WIRE BUNDLE TO SPINDLE MOTOR (ITEM 1) TO BE AS SHOWN.
6. DIRECTION OF ROTATION TO BE AS SHOWN.



BIN NO.	COLOR	FUNCTION
1	GREEN	+12V
2	PURPLE	+5V
3	GRAY	5V
4	WHITE	GROUND
5	BLUE	GROUND
6	BROWN	A3
7	RED	A4
8	RED	A2
9	ORANGE	A1
10	YELLOW	A1



MOTOR TIMING DIAGRAM

FILE	DATE	REV	DESCRIPTION
1	10/1/74	1	INITIAL DESIGN
2	10/1/74	2	REVISED TO ADD WIRING
3	10/1/74	3	REVISED TO ADD TIMING
4	10/1/74	4	REVISED TO ADD DIMENSIONS
5	10/1/74	5	REVISED TO ADD NOTES
6	10/1/74	6	REVISED TO ADD PARTS
7	10/1/74	7	REVISED TO ADD ASSEMBLY
8	10/1/74	8	REVISED TO ADD TESTING
9	10/1/74	9	REVISED TO ADD DRAWING
10	10/1/74	10	REVISED TO ADD FINISH

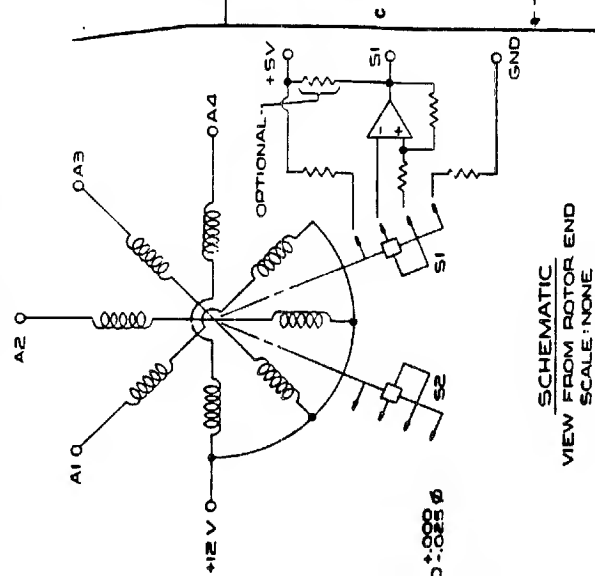
METRIC	
1	2
3	4
5	6
7	8
9	10
11	12
13	14
15	16
17	18
19	20
21	22
23	24
25	26
27	28
29	30
31	32
33	34
35	36
37	38
39	40
41	42
43	44
45	46
47	48
49	50
51	52
53	54
55	56
57	58
59	60
61	62
63	64
65	66
67	68
69	70
71	72
73	74
75	76
77	78
79	80
81	82
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85	86
87	88
89	90
91	92
93	94
95	96
97	98
99	100

SPINDLE MOTOR ASSY-WIDGET

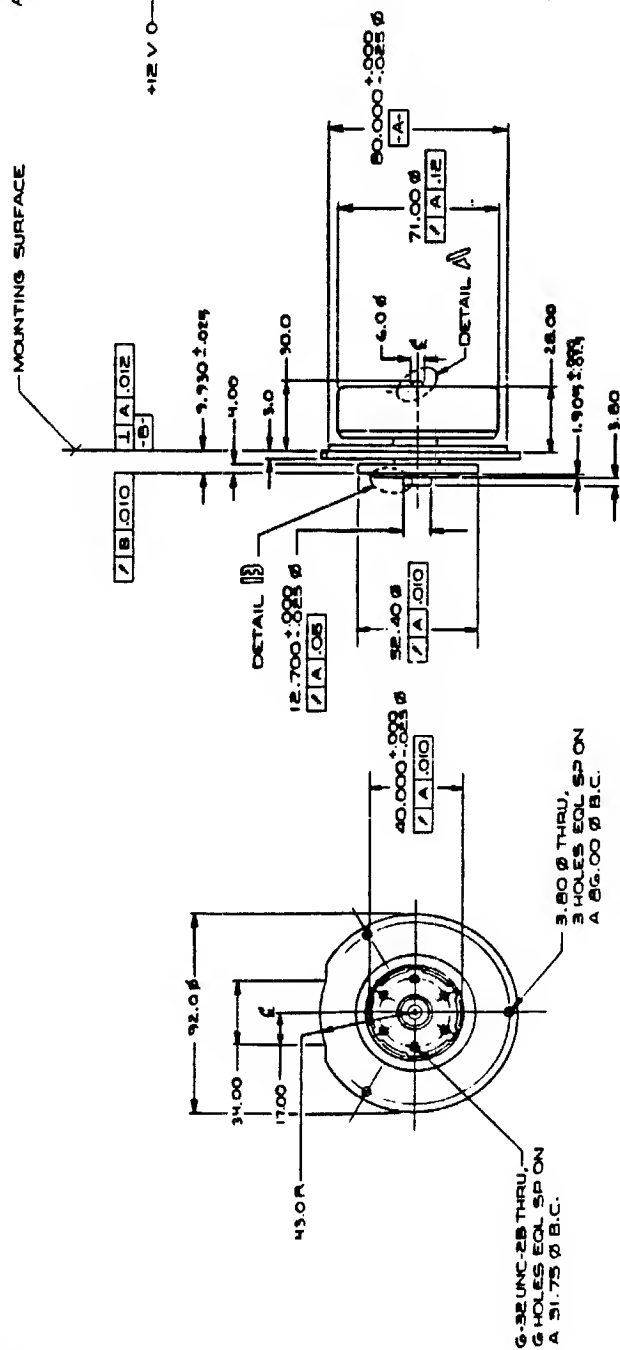
699-0207-B 2/4



SEE SHEET 1 FOR RE,



SCHEMATIC  
VIEW FROM ROTOR END  
SCALE: NONE



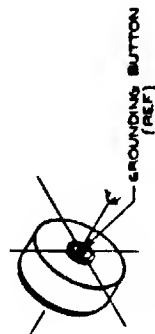
40.000 d R.F.P.

1.0 x 0.4 d R. UNDERCUT 2 PL.

12.000

14.000

**DETAIL 13**  
**SCALE: NONE**

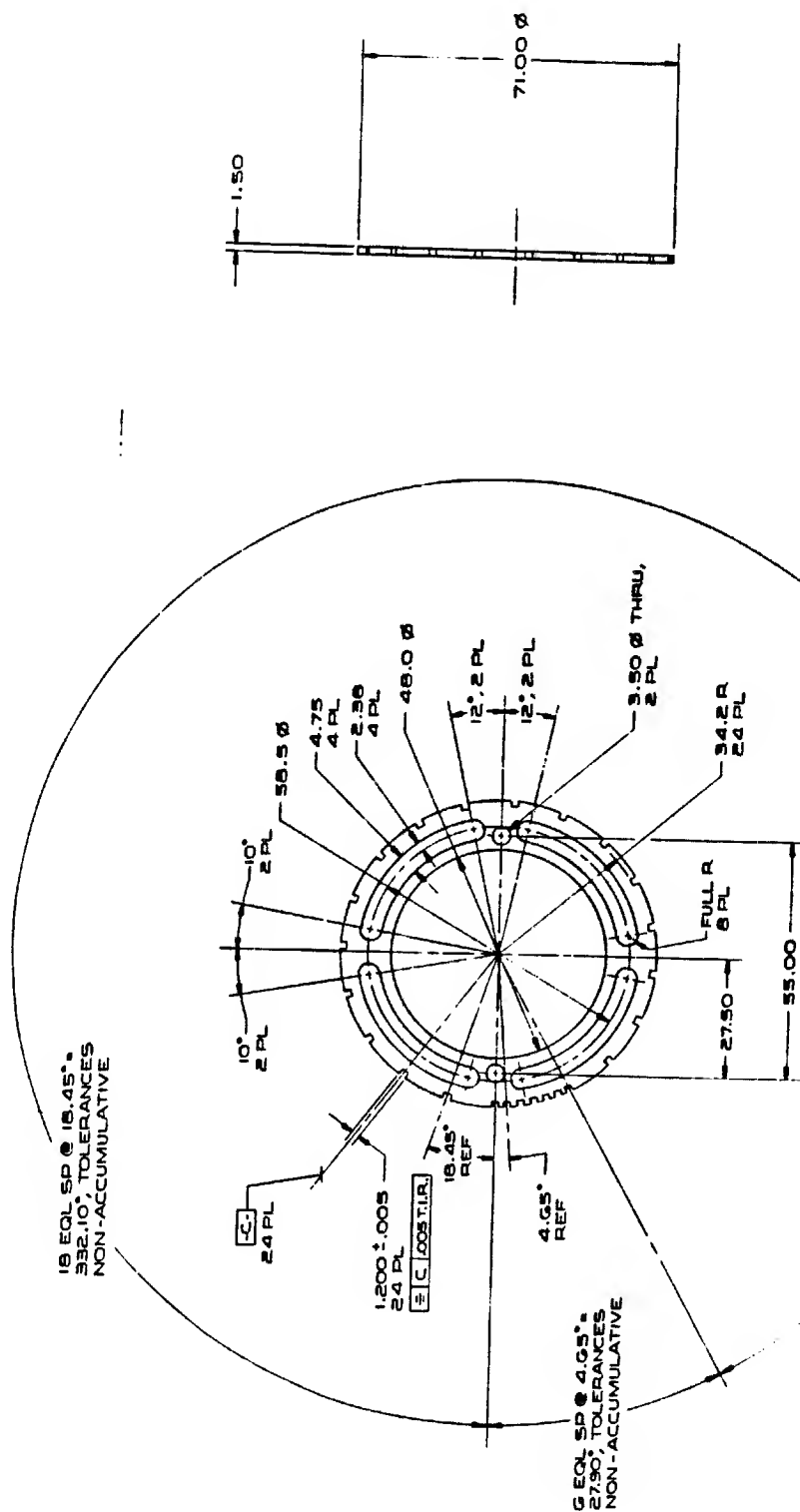


DETAIL A  
SCALE: 1/2" = 1'-0"

① MOTOR, SPINDLE

























[illegible]

SEE SHEET 1 FOR REVISIONS.



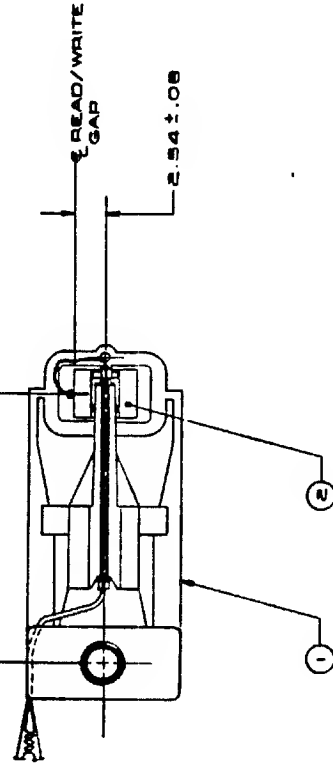
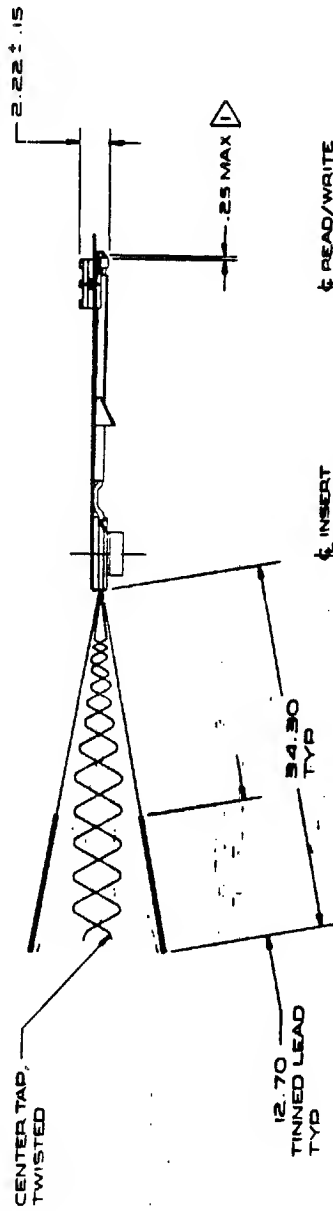
2 DISK, SECTOR

MATL: 16 GA STL. C1020  
FINISH: CAD PL, 013 THK  
(.0005 IN)

NOTE: UNLESS OTHERWISE SPECIFIED

INDICATED DIMENSION SPECIFIES LENGTH OF PVC TUBING THAT MAY EXTEND BEYOND LOAD FINGER.



REF: ASSY, UPPER-HEAD SUSPENSION

899-5000-A 1/8

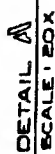
METRIC		INCH	
1	1.27	1	1.27
2	2.54	2	2.54
3	3.81	3	3.81
4	5.08	4	5.08
5	6.35	5	6.35
6	7.62	6	7.62
7	8.91	7	8.91
8	10.16	8	10.16
9	11.43	9	11.43
10	12.70	10	12.70
11	13.97	11	13.97
12	15.24	12	15.24
13	16.51	13	16.51
14	17.78	14	17.78
15	19.05	15	19.05
16	20.32	16	20.32
17	21.59	17	21.59
18	22.86	18	22.86
19	24.13	19	24.13
20	25.40	20	25.40
21	26.67	21	26.67
22	27.94	22	27.94
23	29.21	23	29.21
24	30.48	24	30.48
25	31.75	25	31.75
26	33.02	26	33.02
27	34.29	27	34.29
28	35.56	28	35.56
29	36.83	29	36.83
30	38.10	30	38.10
31	39.37	31	39.37
32	40.64	32	40.64
33	41.91	33	41.91
34	43.18	34	43.18
35	44.45	35	44.45
36	45.72	36	45.72
37	46.99	37	46.99
38	48.26	38	48.26
39	49.53	39	49.53
40	50.80	40	50.80
41	52.07	41	52.07
42	53.34	42	53.34
43	54.61	43	54.61
44	55.88	44	55.88
45	57.15	45	57.15
46	58.42	46	58.42
47	59.69	47	59.69
48	60.96	48	60.96
49	62.23	49	62.23
50	63.50	50	63.50
51	64.77	51	64.77
52	66.04	52	66.04
53	67.31	53	67.31
54	68.58	54	68.58
55	69.85	55	69.85
56	71.12	56	71.12
57	72.39	57	72.39
58	73.66	58	73.66
59	74.93	59	74.93
60	76.20	60	76.20
61	77.47	61	77.47
62	78.74	62	78.74
63	80.01	63	80.01
64	81.28	64	81.28
65	82.55	65	82.55
66	83.82	66	83.82
67	85.09	67	85.09
68	86.36	68	86.36
69	87.63	69	87.63
70	88.90	70	88.90
71	90.17	71	90.17
72	91.44	72	91.44
73	92.71	73	92.71
74	93.98	74	93.98
75	95.25	75	95.25
76	96.52	76	96.52
77	97.79	77	97.79
78	99.06	78	99.06
79	100.33	79	100.33
80	101.60	80	101.60
81	102.87	81	102.87
82	104.14	82	104.14
83	105.41	83	105.41
84	106.68	84	106.68
85	107.95	85	107.95
86	109.22	86	109.22
87	110.49	87	110.49
88	111.76	88	111.76
89	113.03	89	113.03
90	114.30	90	114.30
91	115.57	91	115.57
92	116.84	92	116.84
93	118.11	93	118.11
94	119.38	94	119.38
95	120.65	95	120.65
96	121.92	96	121.92
97	123.19	97	123.19
98	124.46	98	124.46
99	125.73	99	125.73
100	127.00	100	127.00

899-5000-A 1/8

ASSY, UPPER-HEAD SUSPENSION, WIDGET

1399-5000-A 1/8

5. DETAIL B DEPICTS AN OPTIONAL CONFIGURATION. INDICATED FLANGE MAY BOW OUTWARD BEYOND 12.70 DIA TO DIMENSION SHOWN.

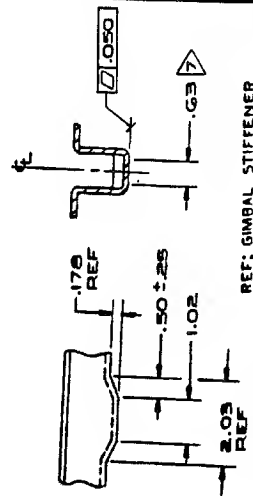
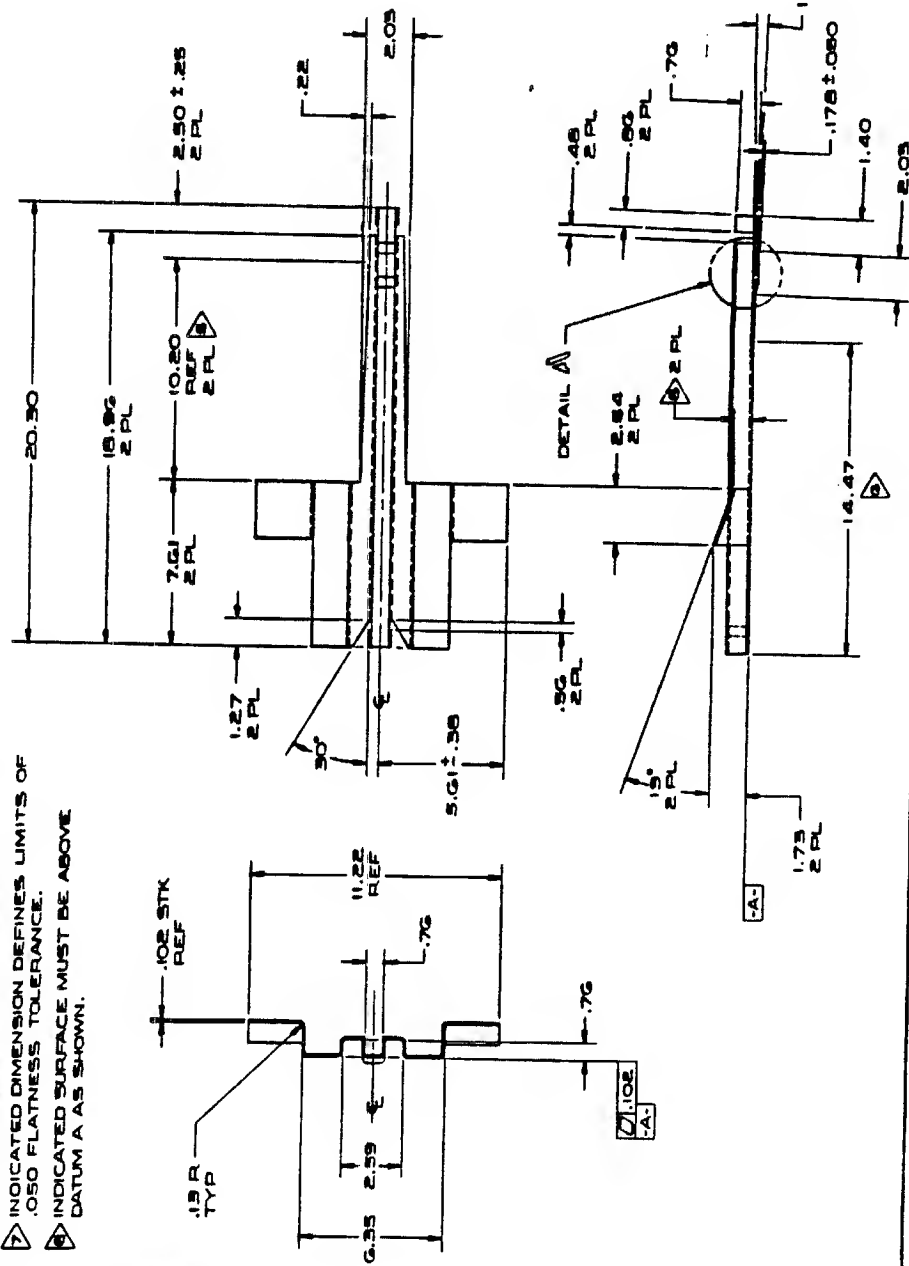


DETAIL 13  
2 PL  
SCALE: 20X

[illegible]

**NOTE: UNLESS OTHERWISE SPECIFIED**

1. MATL: STAINLESS STEEL, 302 HH, .012 ± .005 (.0040 ± .0002 IN.) THK.  
2. FINISH: MICRO-DEBURRING (TUMBLE MACH).  
3. FIRST OPTION: ELECTRO POLISH.  
4. SECOND OPTION: BRIGHT TUMBLE.  
5. NO SHARP EDGES OR BURRS PERMITTED.  
6. PART IS SYMMETRICAL ABOUT CENTERLINE.  
7. INDICATED DIMENSION DEFINES LENGTH OF TAPER.  
8. INDICATED DIMENSION DEFINES SURFACE WHERE 1.83° ANGLE BEGINS.  
9. INDICATED DIMENSION DEFINES LIMITS OF .050 FLATNESS TOLERANCE.  
10. INDICATED SURFACE MUST BE ABOVE DATUM A AS SHOWN.

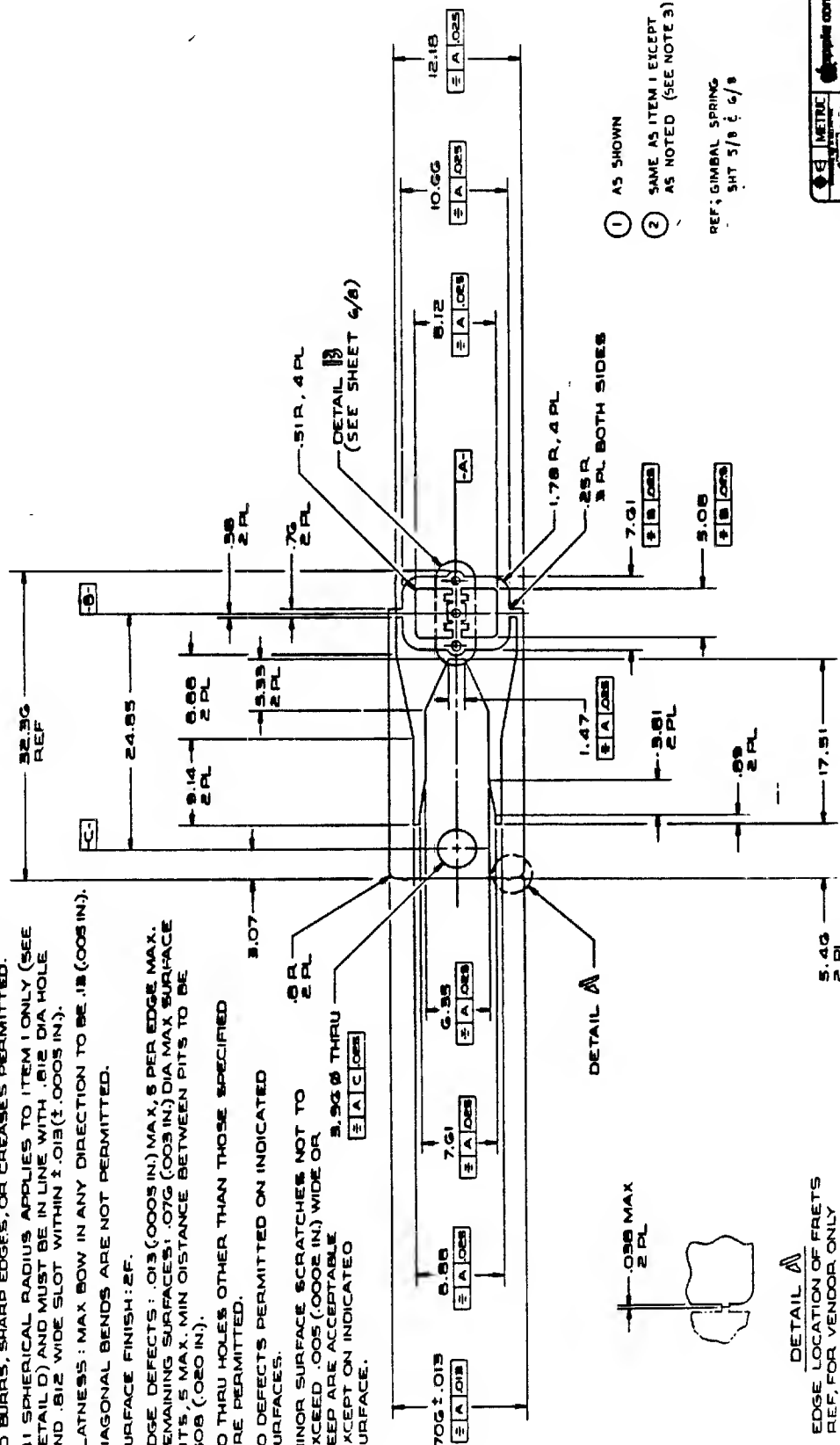


**DETAIL A**  
**SCALE: 20X**

[illegible]

**MATL : SEE NATIONAL MICRONETICS DOCUMENT NO. A-106470.**





























































































2. NO BURRS, SHARP EDGES, OR CREASES PERMITTED.
3. 41 SPHERICAL RADIUS APPLIES TO ITEM 1 ONLY (SEE DETAIL D) AND MUST BE IN LINE WITH .812 DIA HOLE AND .812 WIDE SLOT WITHIN  $\pm .013$  (.0003 IN.).
4. FLATNESS: MAX SOW IN ANY DIRECTION TO BE .18 (.005 IN.).
5. DIAGONAL BENDS ARE NOT PERMITTED.
6. SURFACE FINISH: 2F.
7. EDGE DEFECTS: .013 (.0003 IN.) MAX, 6 PER EDGE MAX. REMAINING SURFACES: .076 (.003 IN.) DIA MAX SURFACE PITS, 5 MAX. MIN DISTANCE BETWEEN PITS TO BE .508 (.020 IN.).
8. NO THRU HOLES OTHER THAN THOSE SPECIFIED ARE PERMITTED.
9. NO DEFECTS PERMITTED ON INDICATED SURFACES.
10. MINOR SURFACE SCRATCHES NOT TO EXCEED .005 (.0002 IN.) WIDE OR DEEP ARE ACCEPTABLE EXCEPT ON INDICATED SURFACE.
- 3.07
- 0.012  
2 PL
- 0.003 Ø THRU
- 3 A C 100%



DETAIL A  
EDGE LOCATION OF FRETS  
REF. FOR VENDOR ONLY  
SCALE: NONE

① AS SHOWN

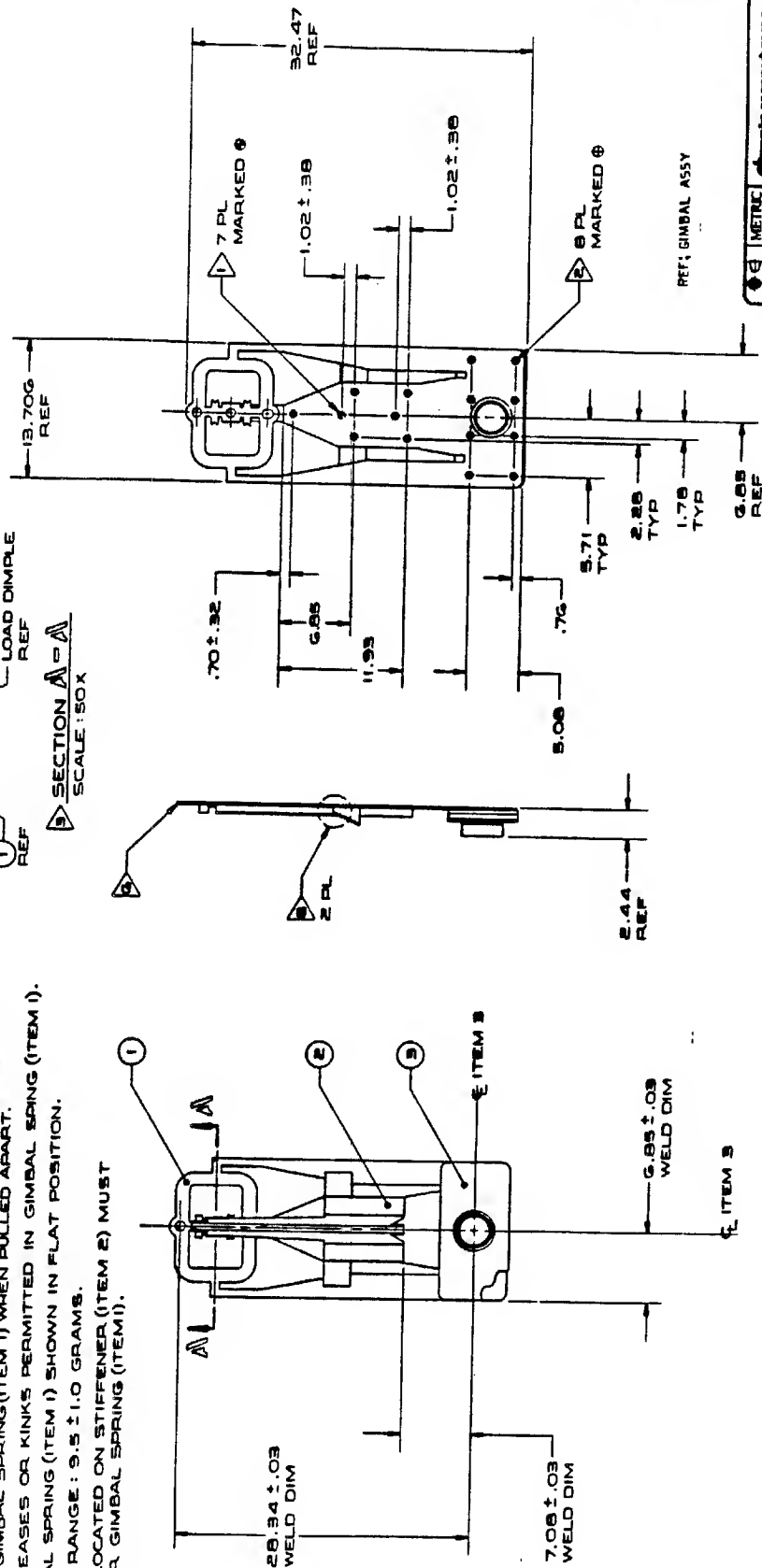
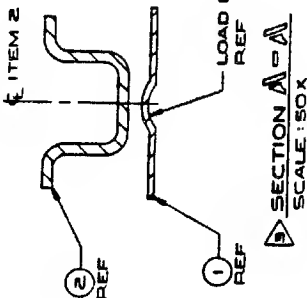
REF; GIMBAL SPRING  
- SHT 3/8 @ 6/8



**NOTE: Unless otherwise specified**

- ① SPOT WELD STIFFENER (ITEM 2) TO GIMBAL SPRING (ITEM 1) IN LOCATIONS SHOWN.
- ② SPOT WELD MOUNT (ITEM 3) TO GIMBAL SPRING (ITEM 1) IN LOCATIONS SHOWN.
- ③ AFTER WELDING, CONTACT POINT BETWEEN LOAD DUMPLE ON GIMBAL SPRING (ITEM 1) AND STIFFENER (ITEM 2) TO BE WITHIN .305 (.012 IN.) OF STIFFENER CENTERLINE.
4. ALL WELDS TO BE SUFFICIENTLY STRONG TO REMOVE NUGGET FROM GIMBAL SPRING (ITEM 1) WHEN PULLED APART.
5. NO CREASES OR KINKS PERMITTED IN GIMBAL SPRING (ITEM 1).
- ⑥ GIMBAL SPRING (ITEM 1) SHOWN IN FLAT POSITION.
7. LOAD RANGE :  $9.5 \pm 1.0$  GRAMS.
- ⑧ CAM LOCATED ON STIFFENER (ITEM 2) MUST CLEAR GIMBAL SPRING (ITEM 1).



**apple computer inc.**

SOURCE OF INFORMATION REPORTS

1000 AVENUE OF THE STARS  
CITY OF NEW YORK, N.Y. 10020  
TELEPHONE (212) 556-2000  
FAX (212) 556-2000

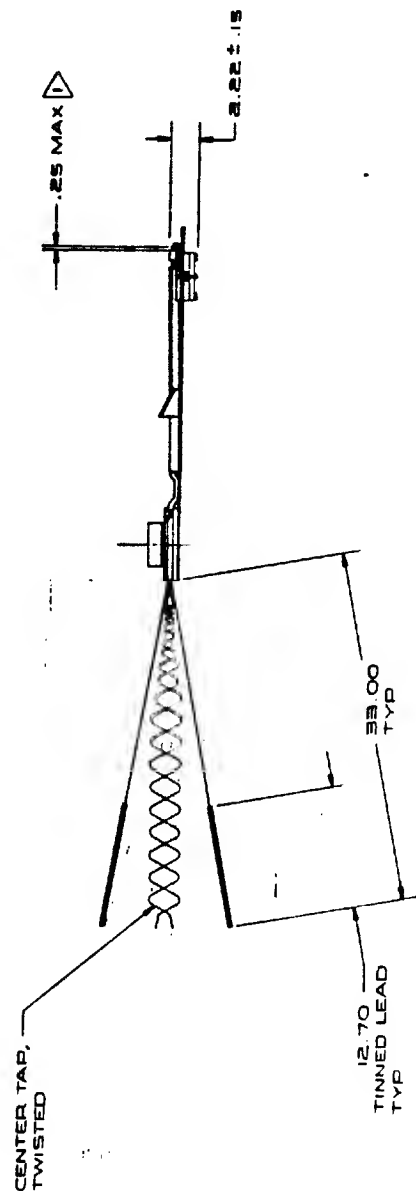
ASSY UPPER HEAD  
505 PENSION,  
WIDGET

699-5000 5%











INDICATED DIMENSION SPECIFIES LENGTH OF PVC TUBING THAT MAY EXTEND BEYOND LOAD FINGER.

REP	FORM	NO	RETURN	DATE
			SEE SHEET 1 (I WAS SK-W059-04)	1/15

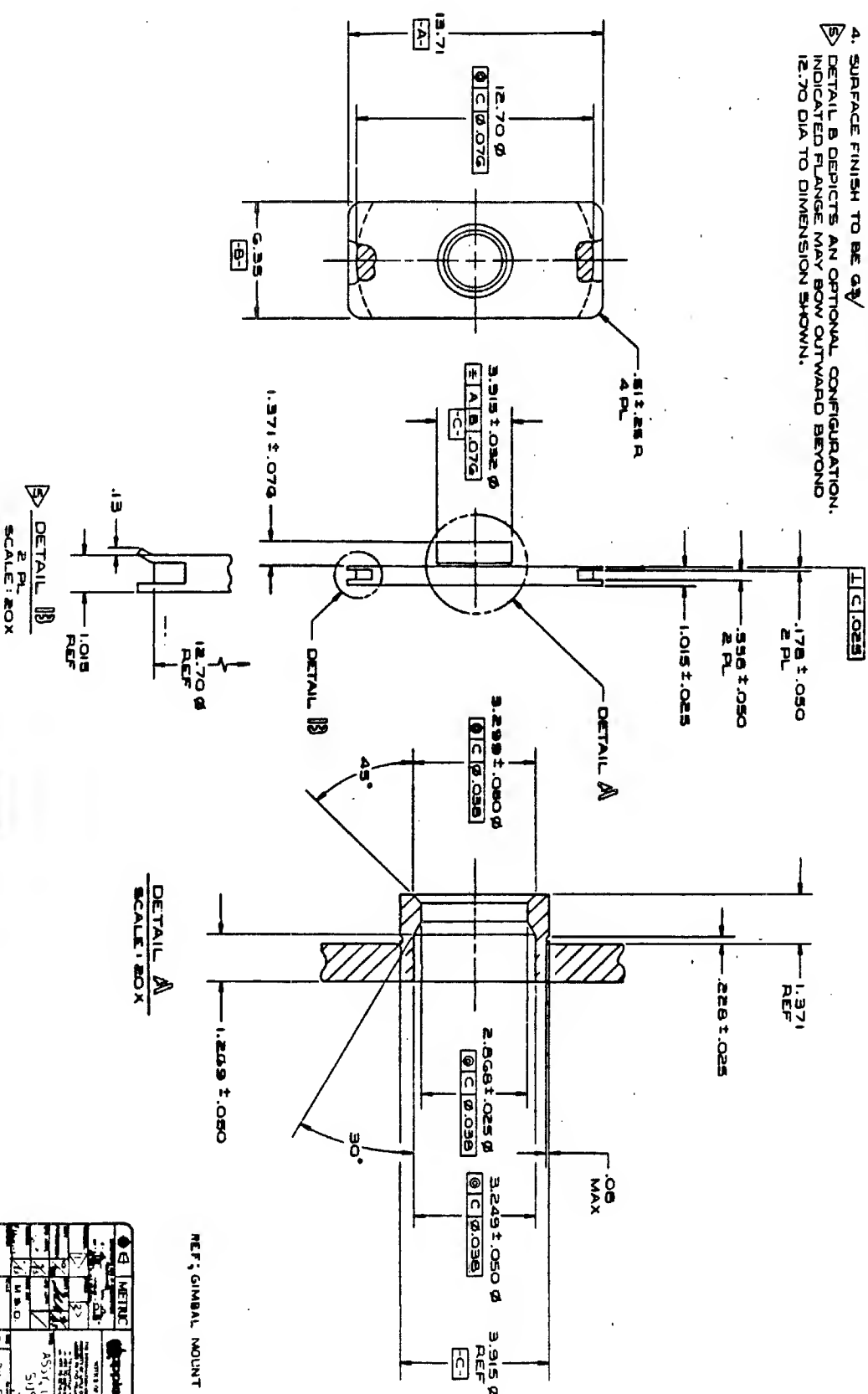


REF; ASSY, LOWER-HEAD SUSPENSION

	METRIC		apple computer inc.
			
			

NAME	SSN	ICD 9	REVISION
			SEE SHEET 1 (HAS SN-NO36)

- [illegible]



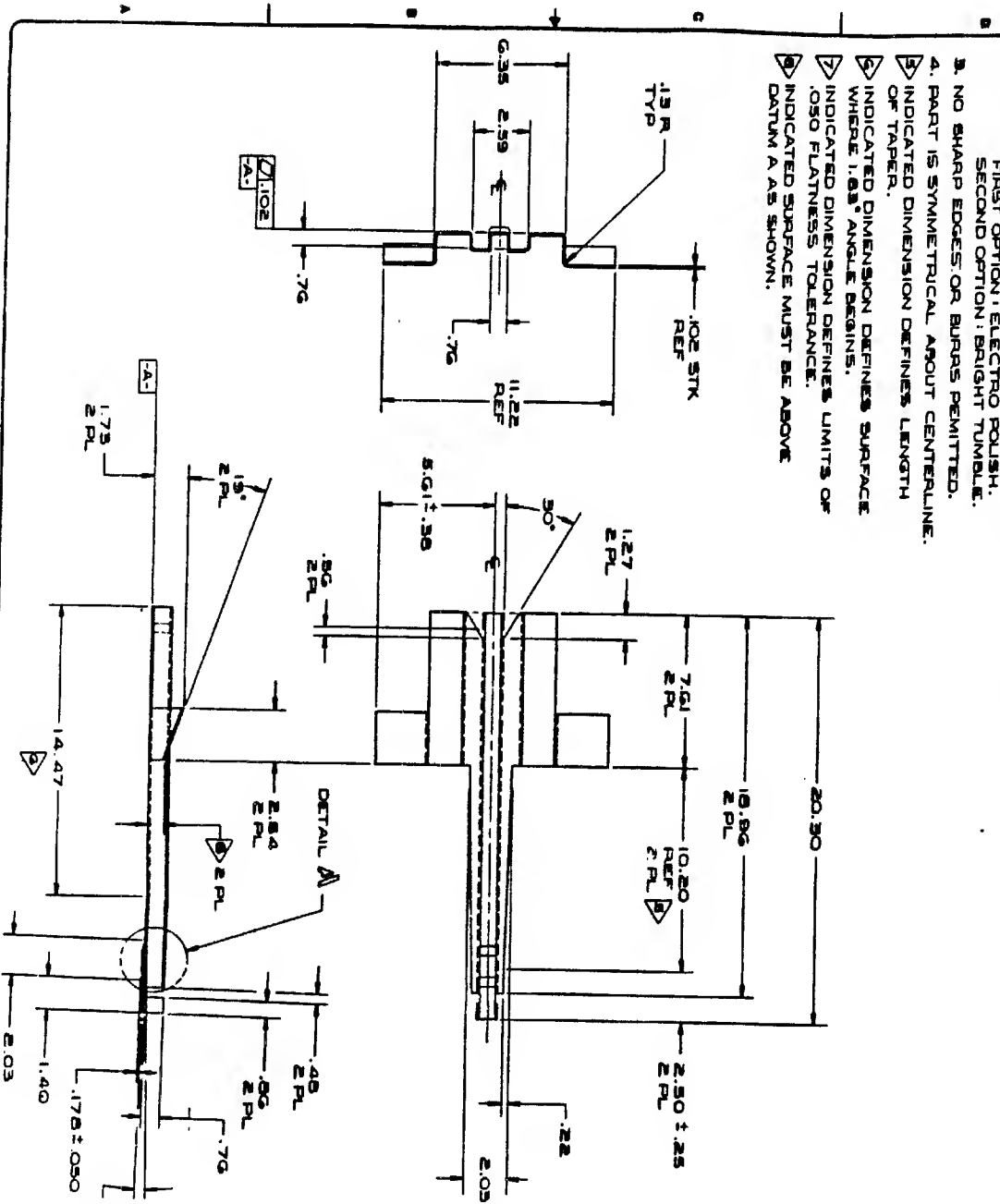
REF; GIMBAL MOUNT

**DETAIL A**  
**SCALE: 20X**

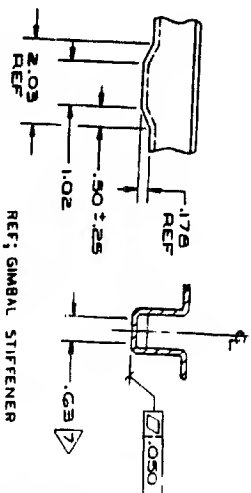
3 DETAIL 13  
2 PL.  
SCALE: 20X

[illegible]

- 1 MATL: STAINLESS STEEL, 302 HH, .102 ± .008 (.0040 ± .0002 IN.) THK.  
2  
3  
4 FINISH: MICRO-DEBURRING (TUMBLE MACH).  
5  
6  
7



DETAIL A  
SCALE: 20X



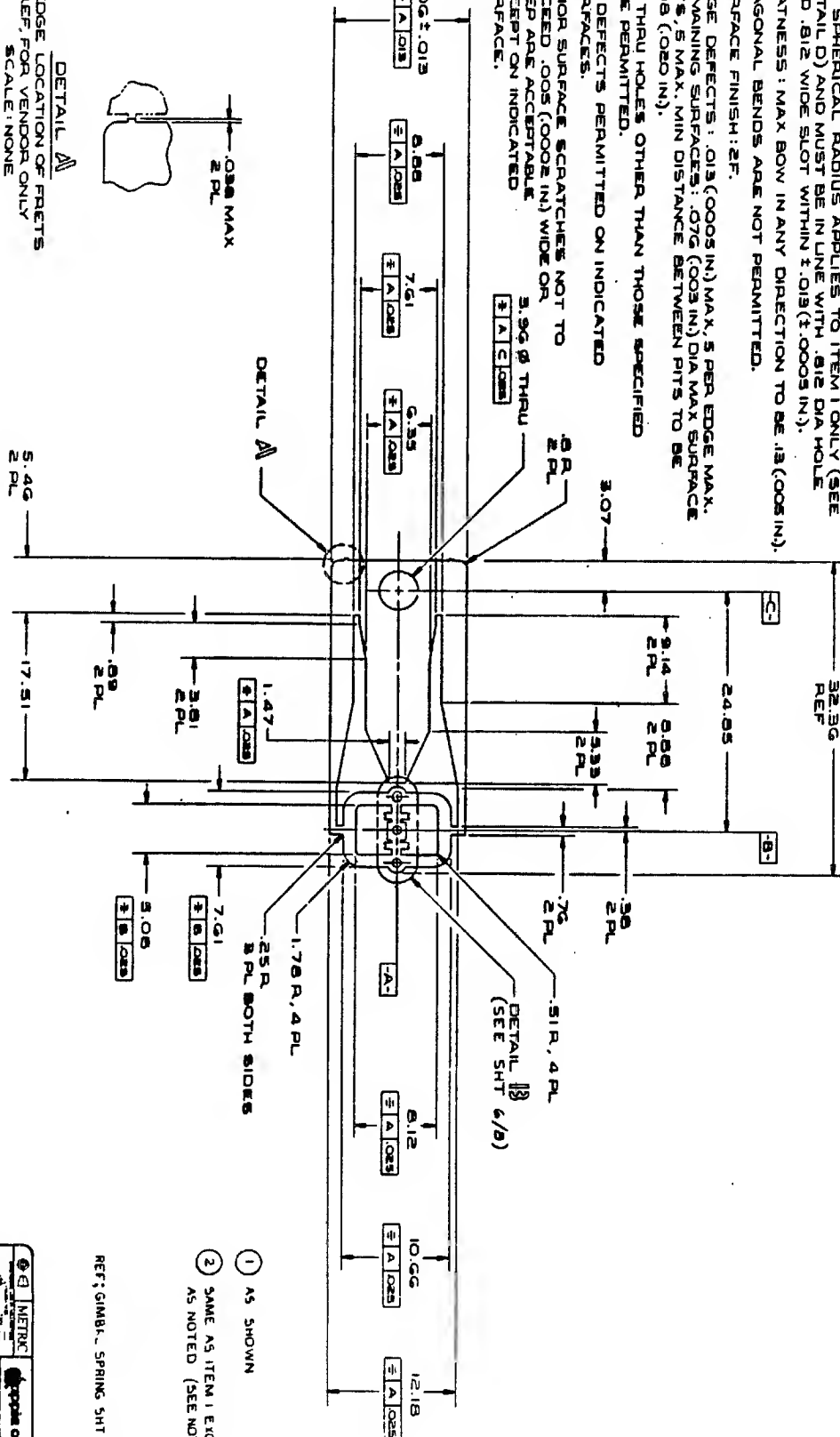
REV	REVISION	DATE
2002		
001	SEE SHEET 1 (WAS SK - W042)	

[illegible]

NOTE: UNLESS OTHERWISE SPECIFIED

1. MATERIAL: SEE NATIONAL MICRONETICS DOCUMENT NO. A-106470.
2. NO BURRS, SHARP EDGES, OR CREASES PERMITTED.
3. .41 SPHERICAL RADIUS APPLIES TO ITEM 1 ONLY (SEE DETAIL D) AND MUST BE IN LINE WITH .812 DIA HOLE AND .812 WIDE SLOT WITHIN  $\pm .013$  (1.0005 IN.).
4. FLATNESS: MAX BOW IN ANY DIRECTION TO BE .13 (0.005 IN.).
5. DIAGONAL BENDS ARE NOT PERMITTED.
6. SURFACE FINISH: 2F.
7. EDGE DEFECTS: .013 (0.0005 IN.) MAX. 5 PER EDGE MAX. REMAINING SURFACES: .076 (0.003 IN.) DIA MAX SURFACE PITS, 5 MAX. MIN DISTANCE BETWEEN PITS TO BE .508 (0.020 IN.).
8. NO THRU HOLES OTHER THAN THOSE SPECIFIED ARE PERMITTED.
9. NO DEFECTS PERMITTED ON INDICATED SURFACES.
10. MINOR SURFACE SCRATCHES NOT TO EXCEED .005 (0.0002 IN.) WIDE OR DEEP ARE ACCEPTABLE EXCEPT ON INDICATED SURFACE.

EDGE LOCATION OF PRETS  
REF. FOR VENDOR ONLY  
SCALE: NONE



REV	DATE	BY	APP
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

SEE SHEET 1  
(NAS 14X W055)

REV	DATE	BY	APP
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

- 1 AS SHOWN
- 2 SAME AS ITEM 1 EXCEPT AS NOTED (SEE NOTE 3)

REF: GIMBL SPRING SHT 5/6 & 6/8

NOTE: (FOR NOTES SEE SHEET 5/8)

DETAIL 11  
SCALE: 50X

SURFACE QUALITY DETAIL  
SCALE: 5X

DETAIL 12  
SCALE: 20X

DETAIL 13  
SCALE: 50X

REF: GIMBAL SPRING SHTS 5/8 & 6/8  
(FOR NOTES SEE SHT 5/8)

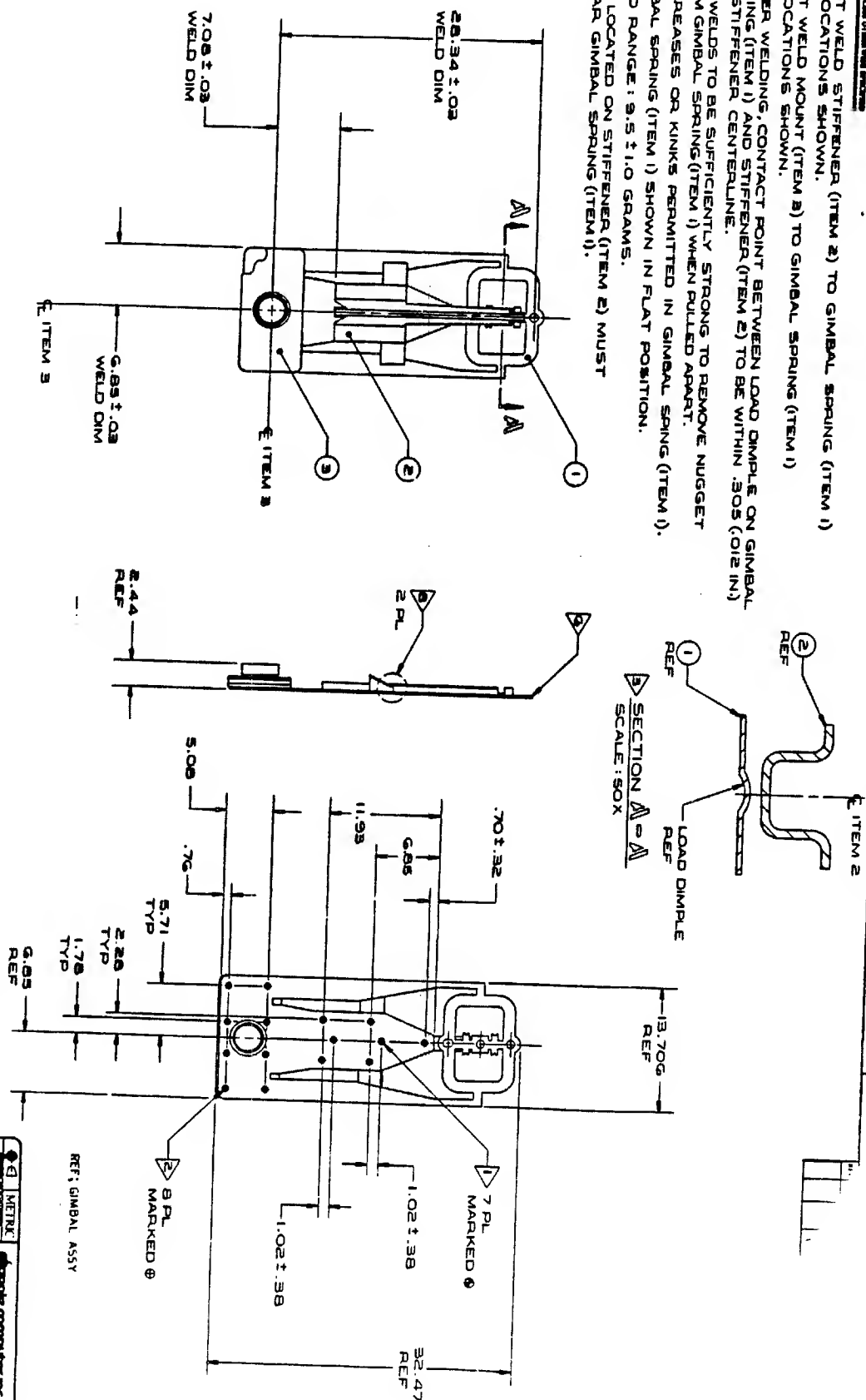
REV	DATE	BY	APP
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

SEE SHEET 1  
(WAS SK. W0551)

Q	METRIC	Q	METRIC
1	1.00	11	11.00
2	2.00	12	12.00
3	3.00	13	13.00
4	4.00	14	14.00
5	5.00	15	15.00
6	6.00	16	16.00
7	7.00	17	17.00
8	8.00	18	18.00
9	9.00	19	19.00
10	10.00	20	20.00

689-5001-A

1. SPOT WELD STIFFENER (ITEM 2) TO GIMBAL SPRING (ITEM 1) IN LOCATIONS SHOWN.
2. SPOT WELD MOUNT (ITEM 2) TO GIMBAL SPRING (ITEM 1) IN LOCATIONS SHOWN.
3. AFTER WELDING, CONTACT POINT BETWEEN LOAD DUMPLE ON GIMBAL SPRING (ITEM 1) AND STIFFENER (ITEM 2) TO BE WITHIN .305 (0.12 IN) OF STIFFENER CENTERLINE.
4. ALL WELDS TO BE SUFFICIENTLY STRONG TO REMOVE NUGGET FROM GIMBAL SPRING (ITEM 1) WHEN PULLED APART.
5. NO CREASES OR KINKS PERMITTED IN GIMBAL SPRING (ITEM 1).
6. GIMBAL SPRING (ITEM 1) SHOWN IN FLAT POSITION.
7. LOAD RANGE: 9.5 ± 1.0 GRAMS.
8. CAM LOCATED ON STIFFENER (ITEM 2) MUST CLEAR GIMBAL SPRING (ITEM 1).

[illegible]

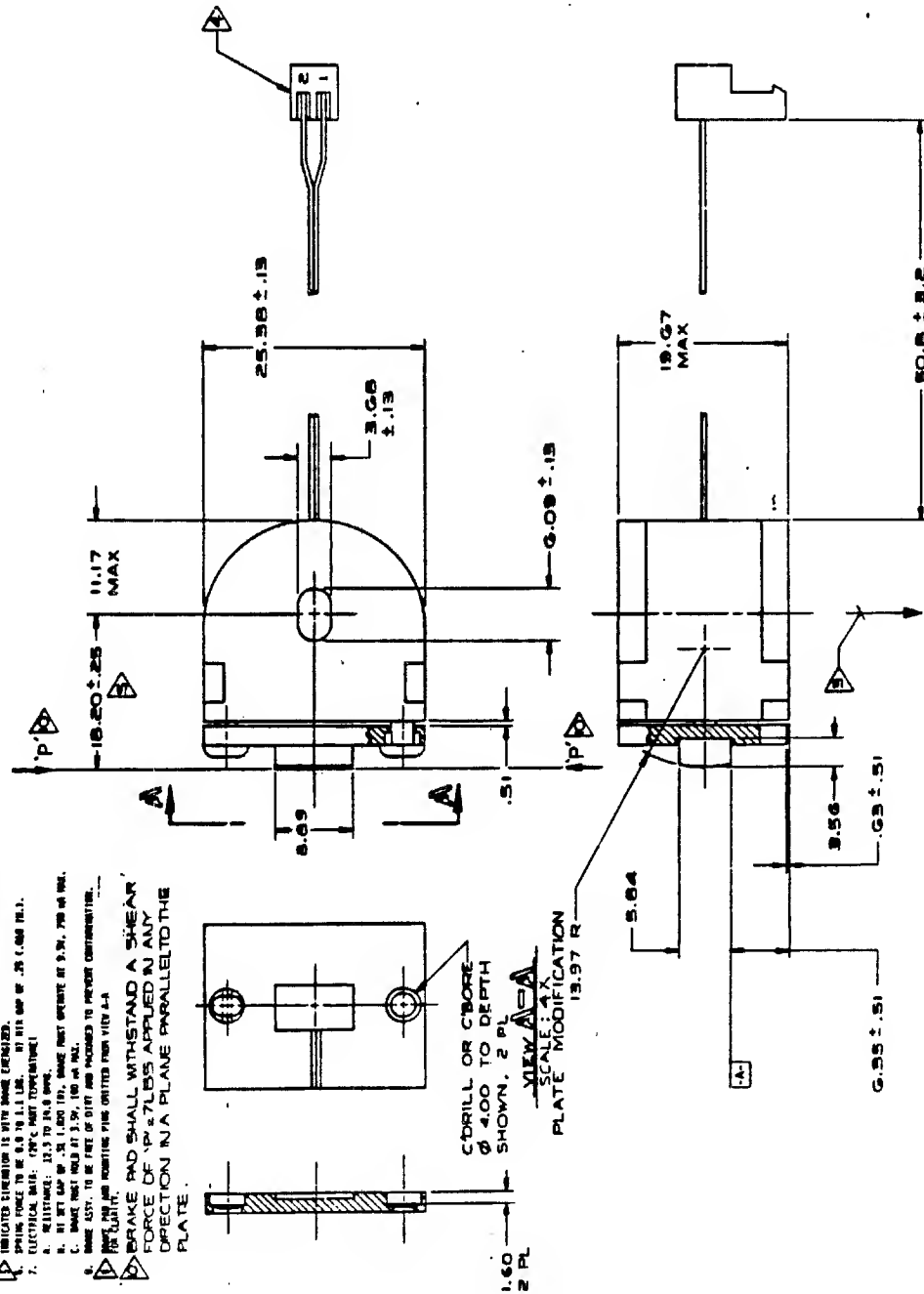
REVISED		REVISION		DATE	
1	1	INITIAL RELEASE, (SHEET 2, 100)	10-30	10-30	10-30
2	2	REVISED SHT 2:			
3	3	1) Added Note 9			
4	4	2) 0.07 INCH 9.40			
5	5	3) Added View A-A			
6	6	4) Added 13.978			
7	7	5) Added 1.54 0.078			
8	8	REVISED SHT 2:			
9	9	1) Added Note 10			
10	10	2) Added as shown 0.078			
11	11	3) Revised Note 6:			
12	12	IS : 1.1 LBS OF AIR			
13	13	MS: 1.1 LBS/10 OF AIR			

THIS IS AN O.C.B. PURCHASED ASSEMBLY TO BE PURCHASED FROM EITEL - INERTIA DYNAMICS INC. (VENDOR 878 (CROSS-REFERENCE)), OR AN EQUIVALENT APPROVED EQUIVALENT, AND IS TO MEET THE SPECIFICATIONS ON SHEET 2 OF THIS PURCHASED ASSEMBLY SPECIFICATION.

SHEET 2 IS FOR VENDOR REFERENCE.

METRIC		UNIT	
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
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93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

PURCHASED ASSEMBLY, 100000, 100000



**1 | E: UNIVERSITÄT WÜRZBURG**

- [illegible]



[illegible]

ASSY 677-0102	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) 1 SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED DESCRIPTION MOD TYP FROM THRU Q	QTY PER ASSY	UOM	E
091 351-2074	QUAD DARLINGTON XS ME D 090183 123199 N	1.000	EA	X
002 337-0421	IC, COP421, CMOS, ME D 090183 123199 N	1.000	EA	
003 327-0451	IC, 75451, PERF PO ME D 090183 123199 N	1.000	EA	
004 372-3904	TRANSISTOR, NPN SW. ME D 090183 123199 N	2.000	EA	
005 372-4403	TRANSISTOR, PNP 2N4 ME D 090183 123199 N	1.000	EA	
006 376-0017	TRANSISTOR, NPN 30 ME D 090183 123199 N	1.000	EA	
007 376-0036	TRANSISTOR, AMPLIFI ME D 090183 123199 N	1.000	EA	
008 371-4001	DIODE RECTIFIER 1N ME D 101983 123199 N	10.000	EA	
009 378-0006	LED, GREEN ME D 090183 123199 N	1.000	EA	
010 101-4101	RES 100 OHM 1/4W 5 ME D 090183 123199 N	2.000	EA	
011 101-4201	RES 200 OHM 1/4W 5 ME D 090183 123199 N	1.000	EA	
012 101-4102	RES 1K OHM 1/4W 5% ME D 090183 123199 N	2.000	EA	
EXPLOSION LEVEL : 1				

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700011 MORE \*\*

ASSY 677-0102	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) 1 SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED DESCRIPTION MOD TYP FROM THRU Q	QTY PER ASSY	UOM	E
013 101-4103	RES 10K OHM 1/4W 5 ME D 090183 123199 N	3.000	EA	X
014 101-4333	RES 33K OHM 1/4W 5 ME D 090183 123199 N	2.000	EA	
005 101-4104	RES 100K OHM 1/4W ME D 090183 123199 N	1.000	EA	
016 101-4105	RES 1M OHM 1/4W 5% ME D 090183 123199 N	1.000	EA	
017 101-2010	RES 1 OHM 1/2W 5% ME D 090183 123199 N	2.000	EA	
018 112-0013	RES NETWORK 5 X 2. ME D 090183 123199 N	1.000	EA	
019 111-0049	RES NETWORK 4 X 10 ME D 090183 123199 N	1.000	EA	
020 137-5401	CAP DIP MICA 20 pF ME D 081583 123199 N	1.000	EA	
021 130-0007	CAP CER AXIAL .1 U ME D 090183 123199 N	13.000	EA	
022 125-6702	CAP ELECT 470 UF 1 ME D 090183 123199 N	1.000	EA	
023 155-7103	CHOKE, COIL 28uH ME D 090183 123199 N	1.000	EA	
024 197-0027	CRYSTAL, 1.940 MHz ME D 090183 123199 N	1.000	EA	
EXPLOSION LEVEL : 1				

ASSY 677-0102	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) 1 SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED DESCRIPTION MOD TYP FROM THRU Q	QTY PER ASSY	UOM	E
025 515-0200	CONN, HDR, STR, LKG, 2 ME D 090183 053084 N	0.000	EA	X
026 515-0207	CONN, HDR, STR, LKG, 7 ME D 090183 123199 N	1.000	EA	
027 515-0103	CONN, HDR, RT ANG, 10 ME D 090183 123199 N	1.000	EA	
030 511-2401	SOCKET, IC 24 PIN ME D 090183 123199 N	1.000	EA	
033 820-5012	PCB, MOTOR CONTROL, ME D 101983 123199 N	1.000	EA	
034 101-4221	RES 220 OHM 1/4W 5 ME D 100383 123199 N	1.000	EA	
035 101-8043	RES 4.3 OHM 1/8W 5 ME D 051684 123199 N	1.000	EA	
036 371-0091	DIODE RECTIFIER 1N ME D 101983 020784 N	0.000	EA	
037 515-0206	CONN, HDR, STR, LKG, 2 ME D 060184 123199 N	1.000	EA	
038 130-0120	CAP CER AXIAL 22 P ME D 060184 123199 N	1.000	EA	
009 050-5023	SCHEMATIC, MOTOR CO ME D 101983 123199 N	0.000	EA	

EXPLOSION LEVEL : 1

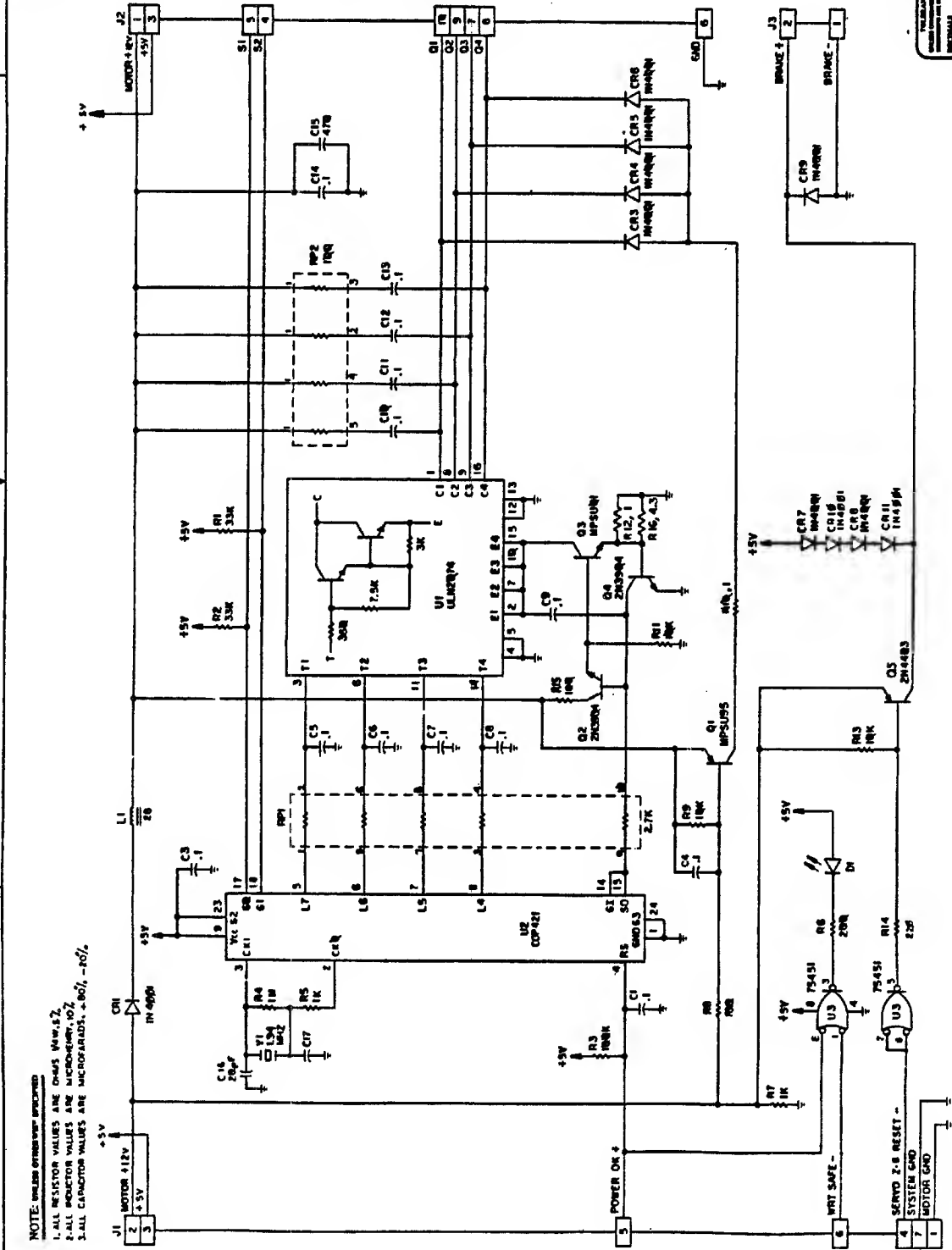
NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700012 END OF LIST \*\*

REV	DATE	BY	DESCRIPTION
A	10/11/77	INITIAL	RELEASE
B	11/14/77	WAS	11-14
C	11/14/77	WAS	11-14
D	11/14/77	WAS	11-14
E	11/14/77	WAS	11-14
F	11/14/77	WAS	11-14
G	11/14/77	WAS	11-14
H	11/14/77	WAS	11-14
I	11/14/77	WAS	11-14
J	11/14/77	WAS	11-14
K	11/14/77	WAS	11-14
L	11/14/77	WAS	11-14
M	11/14/77	WAS	11-14
N	11/14/77	WAS	11-14
O	11/14/77	WAS	11-14
P	11/14/77	WAS	11-14
Q	11/14/77	WAS	11-14
R	11/14/77	WAS	11-14
S	11/14/77	WAS	11-14
T	11/14/77	WAS	11-14
U	11/14/77	WAS	11-14
V	11/14/77	WAS	11-14
W	11/14/77	WAS	11-14
X	11/14/77	WAS	11-14
Y	11/14/77	WAS	11-14
Z	11/14/77	WAS	11-14

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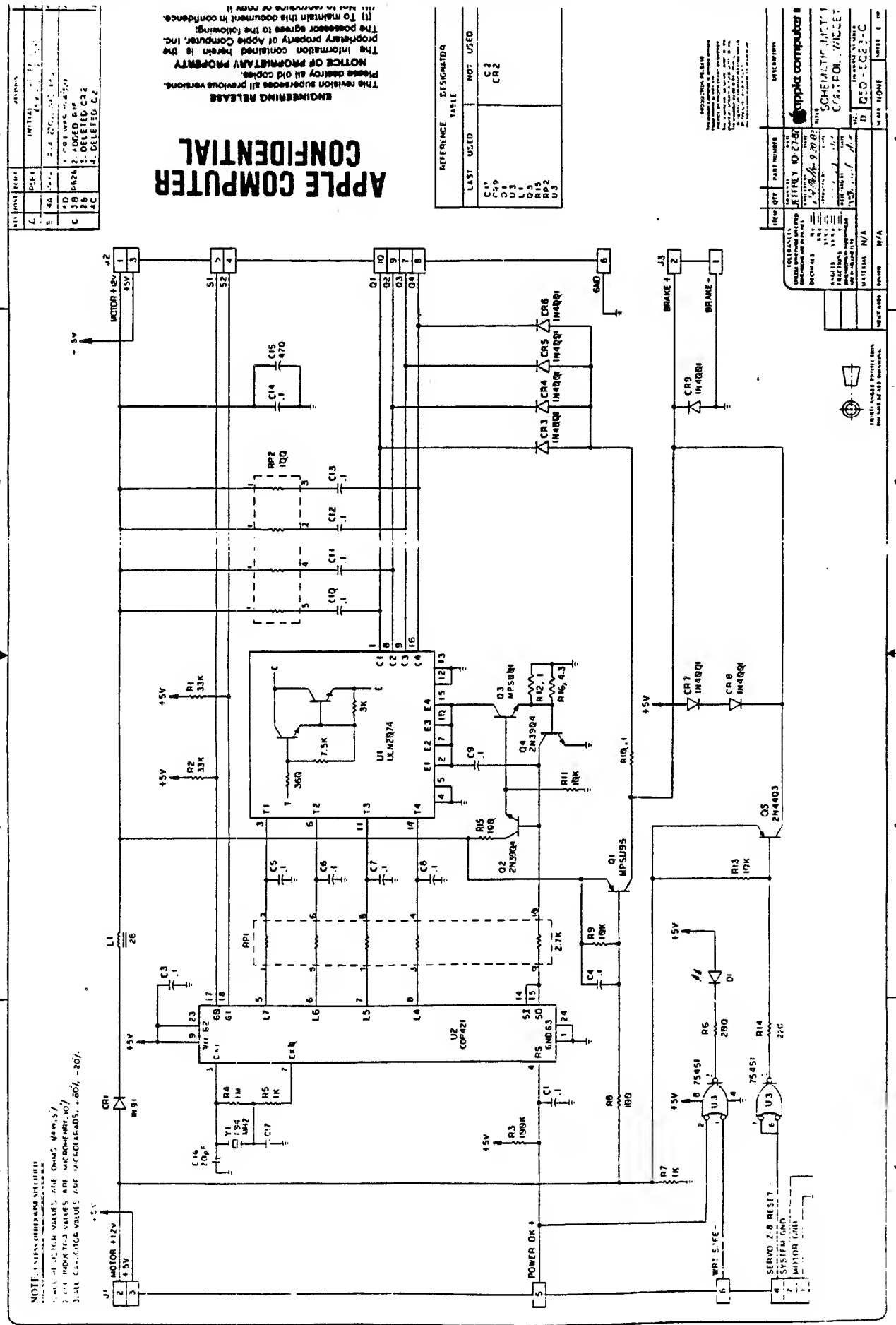
LAST USED	NOT USED
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C18	CR2
D1	
L1	
Q6	
Q8	
Q9	
Q10	
Q11	
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Q13	
Q14	
Q15	
Q16	
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**apple computer inc.**  
KEY: 10-27-77  
DATE: 11-14-77  
BY: WAS  
TITLE: SCHEMATIC, MOTOR CONTROL, WIDET  
D 1000-5023-D  
SCALE: NONE  
SHEET 1 OF 1

NOTE: UNLESS OTHERWISE SPECIFIED:  
1. ALL RESISTOR VALUES ARE OHMS UNLESS NOTED.  
2. ALL INDUCTOR VALUES ARE MICROHENRY,  $\mu H$ .  
3. ALL CAPACITOR VALUES ARE MICROFARAD,  $\mu F$ , UNLESS NOTED.

NOTE: ALL COMPONENT VALUES ARE GIVEN IN PARALLELS UNLESS OTHERWISE SPECIFIED.  
 2. ALL INDICATED VALUES ARE MEASURED AT 10V.  
 3. ALL CAPACITOR VALUES ARE IN MICROFARADS UNLESS OTHERWISE SPECIFIED.



# APPLE COMPUTER II

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LAST USED	NOT USED
C17	C2
C19	CR2
U1	
U3	
L1	
O3	
RP2	
U3	

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6502	6502 MICROPROCESSOR
2	1	6505	6505 TIMER
3	1	6501	6501 ROM
4	1	6503	6503 RAM
5	1	6504	6504 RAM
6	1	6506	6506 RAM
7	1	6507	6507 RAM
8	1	6508	6508 RAM
9	1	6509	6509 RAM
10	1	6510	6510 RAM
11	1	6511	6511 RAM
12	1	6512	6512 RAM
13	1	6513	6513 RAM
14	1	6514	6514 RAM
15	1	6515	6515 RAM
16	1	6516	6516 RAM
17	1	6517	6517 RAM
18	1	6518	6518 RAM
19	1	6519	6519 RAM
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96	1	6596	6596 RAM
97	1	6597	6597 RAM
98	1	6598	6598 RAM
99	1	6599	6599 RAM
100	1	6600	6600 RAM

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	6502	6502 MICROPROCESSOR
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100	1	6600	6600 RAM

REV	DATE	BY	REASON
1	10/14/74	WJS	INITIAL RELEASE
2	10/14/74	WJS	REVISION 1
3	10/14/74	WJS	REVISION 2
4	10/14/74	WJS	REVISION 3
5	10/14/74	WJS	REVISION 4

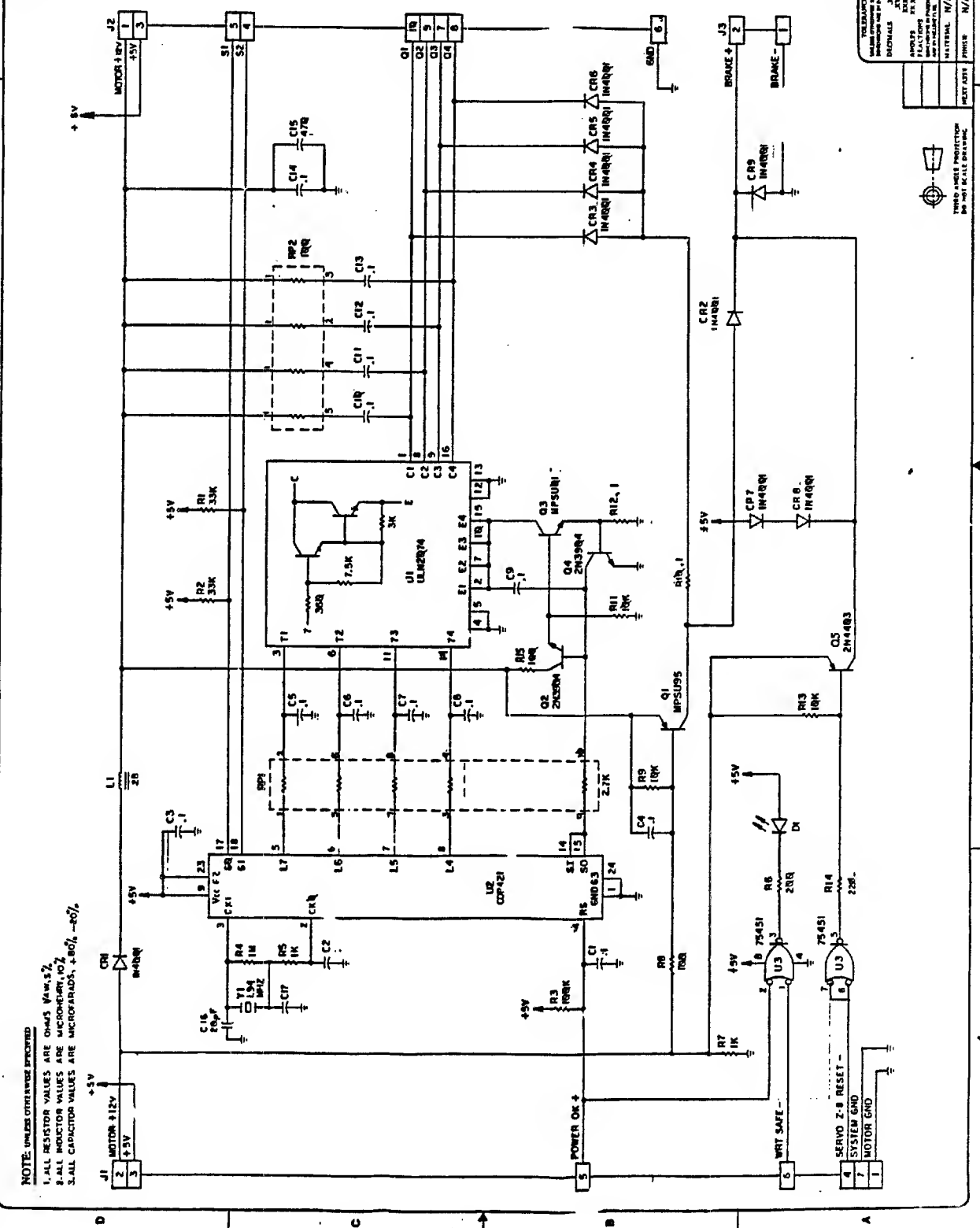
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REFERENCE	DESIGNATOR
LAST	USED
C17	CR6
CR6	Q3
Q3	Q4
Q4	Q5
Q5	Q6
Q6	Q7
Q7	Q8
Q8	Q9
Q9	Q10
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REV	DATE	BY	REASON
1	10/14/74	WJS	INITIAL RELEASE
2	10/14/74	WJS	REVISION 1
3	10/14/74	WJS	REVISION 2
4	10/14/74	WJS	REVISION 3
5	10/14/74	WJS	REVISION 4

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NOTE: UNLESS OTHERWISE SPECIFIED  
1. ALL RESISTOR VALUES ARE OHMS UNLESS OTHERWISE SPECIFIED  
2. ALL CAPACITOR VALUES ARE MICROFARADS UNLESS OTHERWISE SPECIFIED  
3. ALL CAPACITOR VALUES ARE MICROFARADS UNLESS OTHERWISE SPECIFIED



THIRD ANGLE PROJECTION  
DO NOT SCALE DRAWING

SCHEMATIC, MOTOR CONTROL, WIDGET

DATE: 10/14/74

BY: WJS

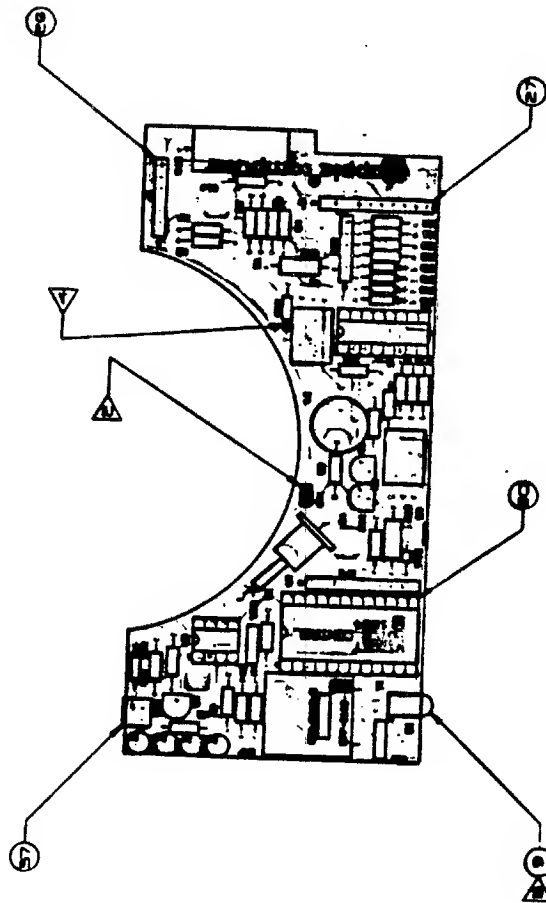
REV: 1

SCALE: NONE

SHEET: 1 OF 1

**NOTE: INCLUDE OPERATING INSTRUCTIONS**

1. REFERENCE SCHEMATIC: OSO-5025.
2. STAMP DATE TESTED 8000.
3. ITEM 9 (DI GREENLED) IS MOUNTED ON NONCOMPONENT SIDE.
4. LEAVE CR2 COMPONENT DESIGNATED SPACE OPEN (NO PART ASSEMBLED).



REV	DATE	DESCRIPTION
1	7/10	REDRAWN AND REVISED
2	7/10	ITEM 37 WAS ADDED ITEM 38 TO B.O.M.
3	7/10	DELETED NOTE 3. NOTE 3 WAS 4
4	7/10	NOTE 4 WAS 5.

SEE SEPARATE BILL OF MATERIAL: G77-0102

DRAWING NUMBER <b>G77-002-E</b>		REV. 1	
DESCRIPTION <b>Motor computer etc</b>		DATE <b>7/10</b>	
DESIGNED BY <b>W. J. H. H. H.</b>		CHECKED BY <b>W. J. H. H. H.</b>	
MATERIALS <b>ASSY. PCB, MOTOR CONTROL BOARD, WIDEST</b>		QUANTITY <b>1</b>	
PARTS LIST <b>G77-0102-E</b>		PAGE <b>1</b>	

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700012 END OF LIST \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0919  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0103 EFF: DATE SER NO LOT NO  
T MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT  
ITEM COMPONENT ABBREVIATED --EFFECTIVITY-- F E  
DESCRIPTION MOD TYP FROM THRU Q QTY PER ASSY UOM X  
001 353-0311 IC, LM311 ME D 090183 123199 N 1.000 EA  
002 353-0444 IC, LF444, 4 SECTI ME D 090183 123199 N 1.000 EA  
003 359-0290 IC, L290 TACHOMETE ME D 090183 123199 N 1.000 EA  
004 354-0074 IC, TL074, TESTED ME D 090183 123199 N 1.000 EA Y  
005 372-3904 TRANSISTOR,NPN SW. ME D 090183 123199 N 1.000 EA  
006 372-3906 TRANSISTOR,PNP SW. ME D 090183 123199 N 1.000 EA  
007 371-4148 DIODE FAST SWITCH ME D 090183 123199 N 1.000 EA  
008 101-4101 RES 100 OHM 1/4W 5 ME D 090183 123199 N 1.000 EA  
009 101-4181 RES 180 OHM 1/4W 5 ME D 090183 123199 N 1.000 EA  
010 328-0115 IC,SSI 115,RD/WR C ME D 090183 123199 N 1.000 EA Y  
011 101-4391 RES 390 OHM 1/4W 5 ME D 090183 123199 N 1.000 EA  
013 101-4102 RES 1K OHM 1/4W 5% ME D 090183 123199 N 2.000 EA  
EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700012 END OF LIST \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0919  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0103 EFF: DATE SER NO LOT NO  
PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT  
ITEM COMPONENT ABBREVIATED --EFFECTIVITY-- F E  
DESCRIPTION MOD TYP FROM THRU Q QTY PER ASSY UOM X  
014 327-0451 IC, 75451, PERF PO ME D 090183 123199 N 1.000 EA  
015 101-4272 RES 2.7K OHM 1/4W ME D 090183 123199 N 1.000 EA  
016 101-4472 RES 4.7K OHM 1/4W ME D 090183 123199 N 1.000 EA  
017 101-4562 RES 5.6K OHM 1/4W ME D 090183 123199 N 1.000 EA  
018 101-4751 RES 750 OHM 1/4W 5 ME D 090183 123199 N 1.000 EA  
019 101-4103 RES 10K OHM 1/4W 5 ME D 090183 123199 N 3.000 EA  
020 101-4243 RES 24K OHM 1/4W 5 ME D 092983 123199 N 1.000 EA  
021 101-4104 RES 100K OHM 1/4W ME D 090183 123199 N 2.000 EA  
022 101-4434 RES 430K OHM 1/4W ME D 090183 123199 N 1.000 EA  
023 106-8252 RES 825 OHM 1/8W 1 ME D 050784 123199 N 2.000 EA  
024 106-2004 RES 20.0K OHMS 1/8 ME D 090183 123199 N 1.000 EA  
025 106-1623 RES, 162K OHMS, 1/ ME D 090183 123199 N 1.000 EA  
EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0920  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0103  
PLT MODEL

EFF: DATE SER NO LOT NO  
SEQ(I,C) I SKIP TO ITEM/COMPONENT

ITM COMPONENT	ABBREVIATED DESCRIPTION	MOD	TYP	FROM	THRU	Q	QTY	PER	ASSY	UOM	E
026 109-0610	RES VARIABLE 14 PI ME	D	090183	123199	N				1.000	EA	
027 109-0620	RES VARIABLE 16 PI ME	D	090183	123199	N				1.000	EA	
028 112-0012	RES NETWORK 4 X 10 ME	D	090183	123199	N				1.000	EA	
029 112-0011	RES NETWORK 4 X 10 ME	D	090183	123199	N				3.000	EA	
030 130-0127	CAP CER AXIAL 1000 ME	D	090183	123199	N				2.000	EA	
031 130-0007	CAP CER AXIAL .1 U ME	D	090183	123199	N				9.000	EA	
032 130-0221	CAP CER .18 uF 10% ME	D	090183	123199	N				1.000	EA	
033 134-5601	CAP CER 33 pF 10% ME	D	090183	123199	N				6.000	EA	
034 120-0023	CAP POLYCARB .018 ME	D	090183	123199	N				2.000	EA	
035 120-0018	CAP POLYCARB .027 ME	D	090183	123199	N				1.000	EA	
036 127-0107	CAP TANT 10 uF 10% ME	D	090183	123199	N				1.000	EA	
037 515-0208	CONN,HDR,STR,LKG,5 ME	D	090183	123199	N				1.000	EA	
EXPLOSION LEVEL : 1											

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0920  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

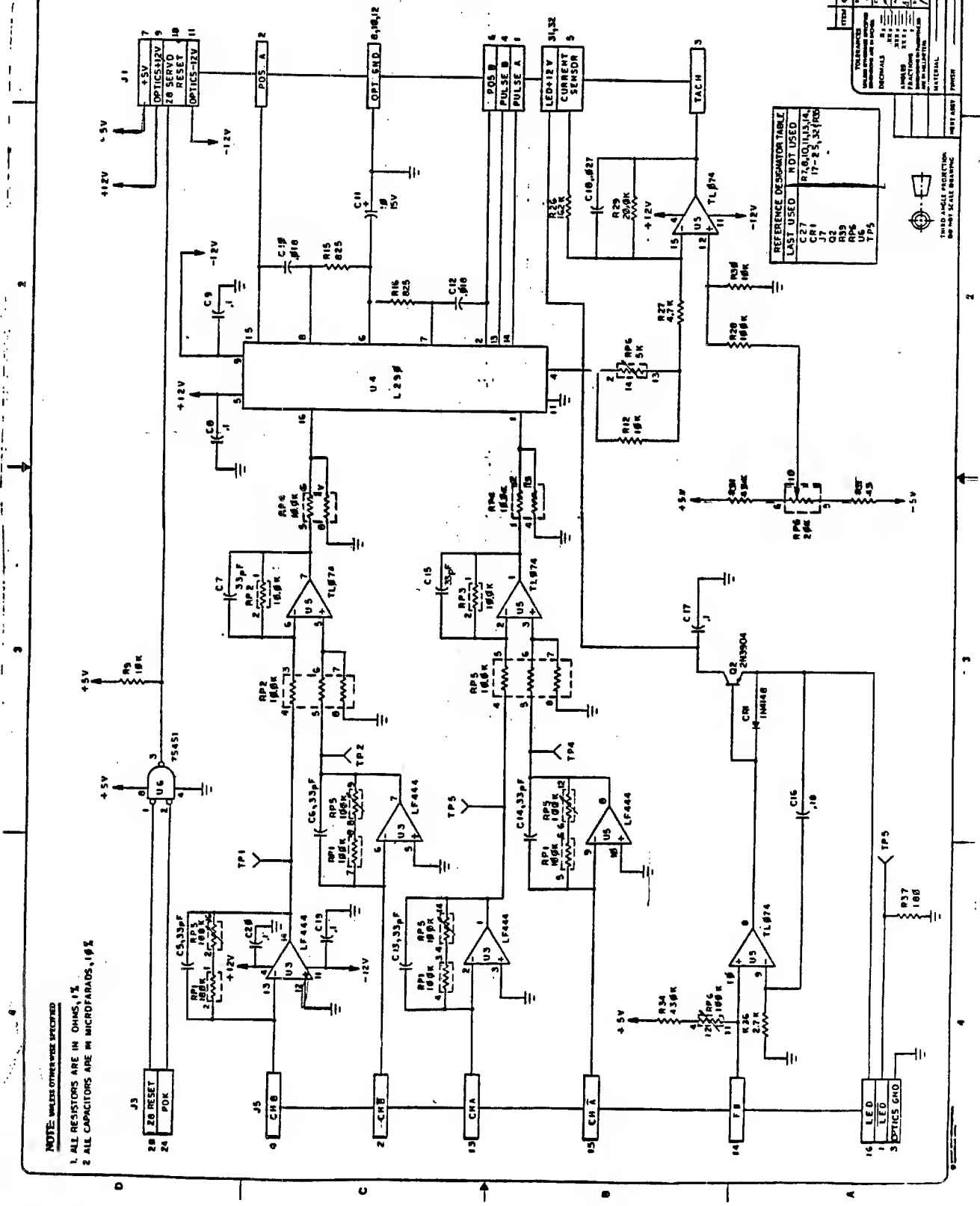
ASSY 677-0103  
PLT MODEL

EFF: DATE SER NO LOT NO  
SEQ(I,C) I SKIP TO ITEM/COMPONENT

ITM COMPONENT	ABBREVIATED DESCRIPTION	MOD	TYP	FROM	THRU	Q	QTY	PER	ASSY	UOM	E
038 515-0508	CONN,HDR,RT ANG,7P ME	D	090183	123199	N				1.000	EA	
039 513-0106	CONN,CD EDG,PC TAI ME	D	090183	123199	N				2.000	EA	
040 515-0005	CONN,PIN,SINGLE ME	D	090183	123199	N				5.000	EA	
042 511-1601	SOCKET, IC 16 PIN ME	D	090183	123199	N				1.000	EA	
043 511-0801	SOCKET, IC 8 PIN ME	D	090183	123199	N				1.000	EA	
044 820-5013	PCB,MOTHER BD,WIDG ME	D	102083	123199	N				1.000	EA	
046 101-4433	RES 43K OHM 1/4W 5 ME	D	090183	123199	N				2.000	EA	
047 101-4683	RES 68K OHM 1/4W 5 ME	D	090183	092883	N				0.000	EA	
048 120-0022	CAP POLYCARB .018 ME	D	092983	123199	N				0.000	EA	
049 120-0025	CAP POLYCARB .027 ME	D	092983	123199	N				0.000	EA	
050 517-1440	SOCKET,PIN,TERMINA ME	D	050784	123199	N				0.125	EA	
999 050-5024	SCHEMATIC,MOTHER B ME	D	092983	123199	N				0.000	EA	
EXPLOSION LEVEL : 1											



1. ALL RESISTORS ARE IN OHMS, 1%  
2. ALL CAPACITORS ARE IN MICROFARADS, 10%



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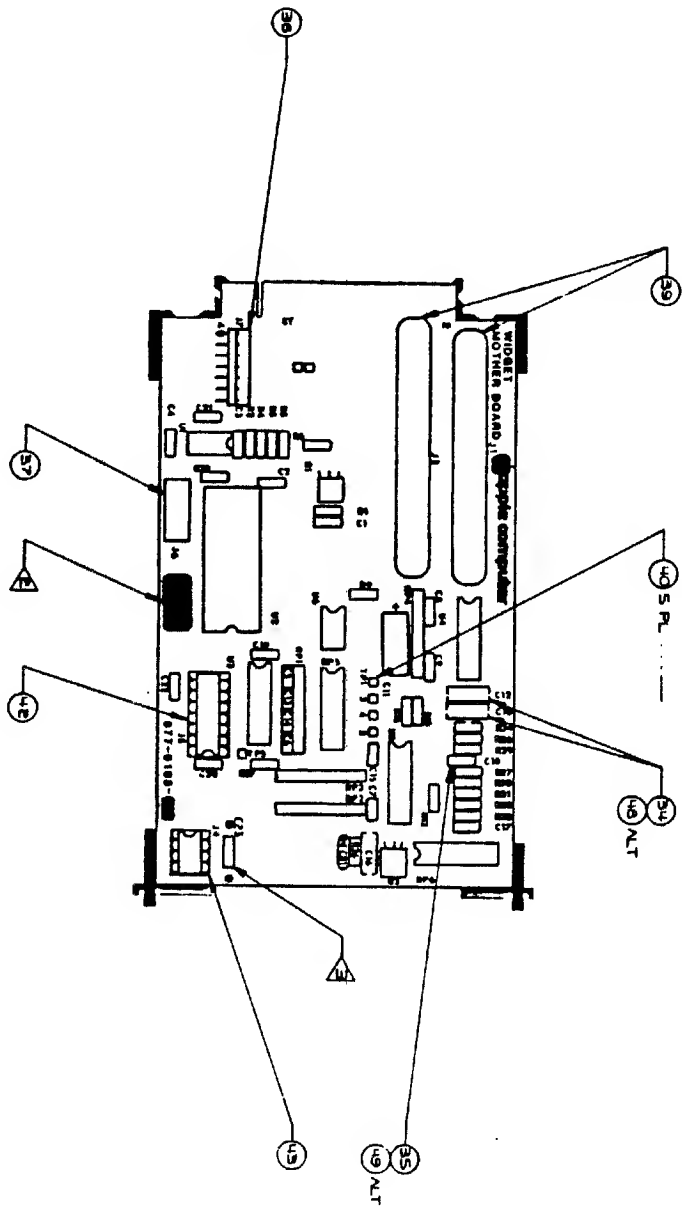
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TO BE LOANED TO: <b>UNITED STATES DEPARTMENT OF COMMERCE</b> ADDRESS: <b>WASHINGTON, D.C. 20540</b> PURPOSE: <b>RESEARCH IN DEVELOPMENT</b>		TITLE: <b>SCHMANT MOTHER BOY WIDGE</b> AUTHOR: <b>DAVID W. WIDGE</b> DATE: <b>05-0-5021</b>		SCALE: <b>NONE</b> PRICE: <b>N/A</b>	
YEAR: _____ QTY: _____ FULL REQUEST: _____	REVIEWED BY: _____ CRUISED BY: _____ APPROVED BY: _____ RECALLED BY: _____	DATE: _____ DATE: _____ DATE: _____ DATE: _____	DECLASSIFIED		



5. NO CAPACITOR REQUIRED FOR C23  
LEAVE EMPTY (DO NOT LOAD):



**Advertisement**

[illegible]

EXPLOD1

PART COMPONENTS EXPL INQ - 1

08/15/85 0921  
01PMH

STEP

ASSY 677-0104

EFF: DATE

SER NO

LOT NO

PLT MODEL

SEQ(I,C) I SKIP TO ITEM/COMPONENT

ABBREVIATED

--EFFECTIVITY-- F

E

DESCRIPTION

MOD

TYP

FROM

THRU

Q

QTY PER ASSY

UOM X

ITEM COMPONENT

01 351-3127

TRANSISTOR,ARRAY N ME

D 101083 123199 N

3.000 EA

02 351-3146

IC, 3146 HI VOLT. MF

D 101083 123199 N

2.000 EA

004 351-6700

IC, TRANS. ARRAY Q ME

D 101083 123199 N

2.000 EA

005 353-0592

IC, VIDEO AMPLIFIE ME

D 101083 123199 N

1.000 EA

006 353-0353

DUAL FET OP AMP/BU ME

D 101083 123199 N

5.000 EA

007 353-0319

IC, HIGH SPEED DUA ME

D 101083 123199 N

1.000 EA

008 353-1350

IC, 1350, IF AMP ME

D 101083 123199 N

1.000 EA

009 327-0452

IC,75452,DUAL PERF ME

D 101083 123199 N

1.000 EA

010 315-0820

IC,TTL,8T20,BI-DIR ME

D 101083 123199 N

1.000 EA

011 329-0002

IC,96LS02,DUAL RET ME

D 101083 052084 N

0.000 EA

012 305-0074

IC, 74LS74 ME

D 101083 123199 N

1.000 EA

013 305-0628

IC, 74LS628 ME

D 101083 123199 N

1.000 EA

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :

DC700011 MORE

\*\*

ABMDISP1

CULLINET MANUFACTURING SYSTEM - GAMMA 1.1

08/15/85 0922

EXPLOD1

PART COMPONENTS EXPL INQ - 1

01PMH

STEP

ASSY 677-0104

EFF: DATE

SER NO

LOT NO

PLT MODEL

SEQ(I,C) I SKIP TO ITEM/COMPONENT

ABBREVIATED

--EFFECTIVITY-- F

E

DESCRIPTION

MOD

TYP

FROM

THRU

Q

QTY PER ASSY

UOM X

ITEM COMPONENT

014 341-0263

IC, LSI READ/WRITE ME

D 101083 123199 N

1.000 EA

15 353-0004

IC,79L05AC VOLTAGE ME

D 101083 123199 N

2.000 EA

6 372-3904

TRANSISTOR,NPN SW. ME

D 101083 113083 N

0.000 EA

017 372-5555

TRANSISTOR,N-CHANN ME

D 101083 123199 N

1.000 EA

018 371-0914

DIODE FAST SWITCH ME

D 101083 113083 N

0.000 EA

019 101-4027

RES 2.7 OHM 1/4W 5 ME

D 101083 123199 N

3.000 EA

020 101-4390

RES 39 OHM 1/4W 5% ME

D 101083 123199 N

0.000 EA

021 101-4101

RES 100 OHM 1/4W 5 ME

D 101083 123199 N

1.000 EA

022 101-4151

RES 150 OHM 1/4W 5 ME

D 101083 123199 N

2.000 EA

023 101-4241

RES 240 OHM 1/4W 5 ME

D 101083 123199 N

1.000 EA

024 108-2672

RES 267 OHM 1/4W 1 ME

D 101083 123199 N

2.000 EA

025 101-4391

RES 390 OHM 1/4W 5 ME

D 101083 123199 N

9.000 EA

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :

DC700011 MORE

\*\*

ABMDISP1

CULLINET MANUFACTURING SYSTEM - GAMMA 1.1

08/15/85 0924

EXPLOD1

PART COMPONENTS EXPL INQ - 1

01PMH

STEP

ASSY 677-0104	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED	MOD TYP FROM THRU Q	QTY PER ASSY	UOM X
027 101-4471	RES 470 OHM 1/4W 5 ME	D 101083 123199 N	2.000	EA
028 101-4511	RES 510 OHM 1/4W 5 ME	D 101083 123199 N	3.000	EA
029 101-4561	RES 560 OHM 1/4W 5 ME	D 101083 123199 N	1.000	EA
030 101-4621	RES 620 OHM 1/4W 5 ME	D 101083 123199 N	1.000	EA
031 101-4751	RES 750 OHM 1/4W 5 ME	D 101083 123199 N	4.000	EA
032 101-4102	RES 1K OHM 1/4W 5% ME	D 120183 123199 N	8.000	EA
033 101-4152	RES 1.5K OHM 1/4W ME	D 101083 123199 N	4.000	EA
034 101-4202	RES 2K OHM 1/4W 5% ME	D 101083 123199 N	9.000	EA
035 101-4272	RES 2.7K OHM 1/4W ME	D 101083 123199 N	1.000	EA
036 101-4332	RES 3.3K OHM 1/4W ME	D 101083 123199 N	4.000	EA
037 101-4392	RES 3.9K OHM 1/4W ME	D 101083 123199 N	3.000	EA
038 101-4472	RES 4.7K OHM 1/4W ME	D 120183 123199 N	2.000	EA
EXPLOSION LEVEL : 1				

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE \*\*

ASSY 677-0104	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED	MOD TYP FROM THRU Q	QTY PER ASSY	UOM X
038 101-4103	RES 10K OHM 1/4W 5 ME	D 120183 123199 N	9.000	EA
039 101-4123	RES 12K OHM 1/4W 5 ME	D 101083 113083 N	0.000	EA
040 101-4243	RES 24K OHM 1/4W 5 ME	D 101083 123199 N	1.000	EA
041 108-1001	RES 10 OHM 1/4W 1% ME	D 101083 123199 N	1.000	EA
042 101-4563	RES 56K OHM 1/4W 5 ME	D 101083 123199 N	1.000	EA
043 101-4753	RES 75K OHM 1/4W 5 ME	D 101083 123199 N	2.000	EA
044 101-4104	RES 100K OHM 1/4W ME	D 101083 121483 N	0.000	EA
045 101-4164	RES 160K OHM 1/4W ME	D 101083 123199 N	1.000	EA
047 101-4474	RES 470K OHM 1/4W ME	D 101083 113083 N	0.000	EA
048 108-1003	RES 1K OHM 1/4W 1% ME	D 120183 123199 N	4.000	EA
050 108-3923	RES 3.92K OHM 1/4W ME	D 101083 123199 N	2.000	EA
051 108-1214	RES 12.1K OHM 1/4W ME	D 101083 123199 N	4.000	EA
EXPLOSION LEVEL : 1				

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE \*\*

ASSY 677-0104	EFF: DATE	SER NO	LOT NO	
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT			
ITM COMPONENT	ABBREVIATED	MOD TYP FROM THRU Q	QTY PER ASSY	UOM X
052 108-2434	RES 24.3K OHM 1/4W ME	D 101083 123199 N	5.000	EA
053 108-6814	RES 68.1K OHM 1/4W ME	D 101083 123199 N	2.000	EA
054 137-5301	CAP DIP MICA 15 pF ME	D 101083 123199 N	2.000	EA
055 109-0422	POT, 1 TURN .250 D ME	D 101083 123199 N	1.000	EA
056 130-0119	CAP CER AXIAL 12 P ME	D 120183 123199 N	1.000	EA
057 130-0120	CAP CER AXIAL 22 P ME	D 101083 123199 N	1.000	EA
058 130-0121	CAP CER AXIAL 47 P ME	D 101083 123199 N	1.000	EA
059 130-0122	CAP CER AXIAL 100 ME	D 101083 123199 N	7.000	EA
062 130-0125	CAP CER AXIAL 470 ME	D 101083 123199 N	2.000	EA
063 130-0126	CAP CER AXIAL 510 ME	D 120183 123199 N	5.000	EA
064 130-0218	CAP CER .0022 uF 10 ME	D 101083 123199 N	5.000	EA
066 130-0220	CAP CER .022 uF 10 ME	D 101083 123199 N	1.000	EA
EXPLOSION LEVEL : 1				

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0926  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0104	EFF: DATE	SER NO	LOT NO
.T MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT		
.TM COMPONENT	ABBREVIATED	--EFFECTIVITY-- F	E
067 130-0007	DESCRIPTION MOD TYP FROM THRU Q	QTY PER ASSY	UOM X
068 151-5401	CAP CER AXIAL .1 U ME D 101083 123199 N	39.000	EA
069 197-0017	INDUCTOR, 18 uH 10 ME D 101083 123199 N	4.000	EA
070 156-0113	CRYSTAL, 10MHz ME D 101083 123199 N	1.000	EA
071 515-0005	DELAY LINE, 80 NS, ME D 101083 123199 N	1.000	EA
072 108-1004	CONN,PIN,SINGLE ME D 101083 123199 N	10.000	EA
073 106-2103	RES 10.0K OHM 1/4W ME D 120183 123199 N	3.000	EA
074 511-0801	RES 2.10K OHMS 1/8 ME D 101083 113083 N	0.000	EA
075 511-1401	SOCKET, IC 8 PIN ME D 101083 041584 N	0.000	EA
076 511-1601	SOCKET, IC 14 PIN ME D 101083 123199 N	1.000	EA
077 511-4001	SOCKET, IC 16 PIN ME D 101083 041584 N	0.000	EA
078 511-4001	SOCKET, IC 40 PIN ME D 101083 123199 N	1.000	EA
078 820-5017	PCB.,R/W BD.WIDGET ME D 110183 123199 N	1.000	EA
EXPLOSION LEVEL : 1			

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0927  
 EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STE

ASSY 677-0104	EFF: DATE	SER NO	LOT NO
PLT MODEL	SEQ(I,C) I SKIP TO ITEM/COMPONENT		
ITM COMPONENT	ABBREVIATED	--EFFECTIVITY-- F	
079 101-4153	DESCRIPTION MOD TYP FROM THRU Q	QTY PER ASSY	UOM
080 101-4394	RES 15K OHM 1/4W 5 ME D 101083 123199 N	1.000	EA
081 130-0128	RES 390K OHM 1/4W ME D 101083 123199 N	2.000	EA
082 108-1503	CAP CER AXIAL 150 ME D 101083 123199 N	1.000	EA
083 108-1823	RES 1.5K OHM 1/4W ME D 120183 123199 N	2.000	EA
084 108-2003	RES 1.82K OHM 1/4W ME D 101083 113083 N	0.000	EA
085 108-3013	RES 2K OHM 1/4W 1% ME D 120183 123199 N	2.000	EA
086 111-0002	RES 3.01K OHM 1/4W ME D 120183 123199 N	4.000	EA
087 112-0014	RES NETWORK 7 X 3. ME D 101083 123199 N	3.000	EA
088 112-0011	RES NETWORK 4 X 15 ME D 101083 123199 N	2.000	EA
089 137-5201	RES NETWORK 4 X 10 ME D 101083 123199 N	1.000	EA
092 137-6402	CAP DIP MICA 12 pF ME D 120183 123199 N	1.000	EA
092 137-6402	CAP DIP MICA 200 p ME D 101083 123199 N	2.000	EA
EXPLOSION LEVEL : 1			

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
 DC700011 MORE \*\*

NEXT RESPONSE : EXPL0D1 NEXT KEY :  
DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0928  
EXPL0D1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

SSY 677-0104 EFF: DATE SER NO LOT NO  
PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT  
ABBREVIATED --EFFECTIVITY-- F  
ITEM COMPONENT DESCRIPTION MOD TYP FROM THRU Q QTY PER ASSY UOM X  
093 101-4393 RES 39K OHM 1/4W 5 ME D 101083 123199 N 1.000 EA  
095 137-5803 CAP DIP MICA 62 pF ME D 101083 123199 N 1.000 EA  
096 130-0012 CAP CER AXIAL .015 ME D 120183 123199 N 2.000 EA  
097 130-0129 CAP CER AXIAL 8.2 ME D 101083 123199 N 1.000 EA  
098 101-4620 RES 62 OHM 1/4W 5% ME D 101083 123199 N 2.000 EA  
099 371-4148 DIODE FAST SWITCH ME D 120183 123199 N 6.000 EA  
100 101-4562 RES 5.6K OHM 1/4W ME D 120183 123199 N 1.000 EA  
101 101-4274 RES 270K OHM 1/4W ME D 120183 123199 N 1.000 EA  
102 130-0219 CAP CER .01 uF 10% ME D 120183 123199 N 2.000 EA  
103 108-2103 RES 2.10K OHM 1/4W ME D 120183 043084 N 0.000 EA  
104 130-0222 CAP CER .001 UF 10 ME D 120183 043084 N 0.000 EA  
105 108-4753 RES 4.75K OHM 1/4W ME D 020184 123199 N 1.000 EA  
EXPLOSION LEVEL : 1

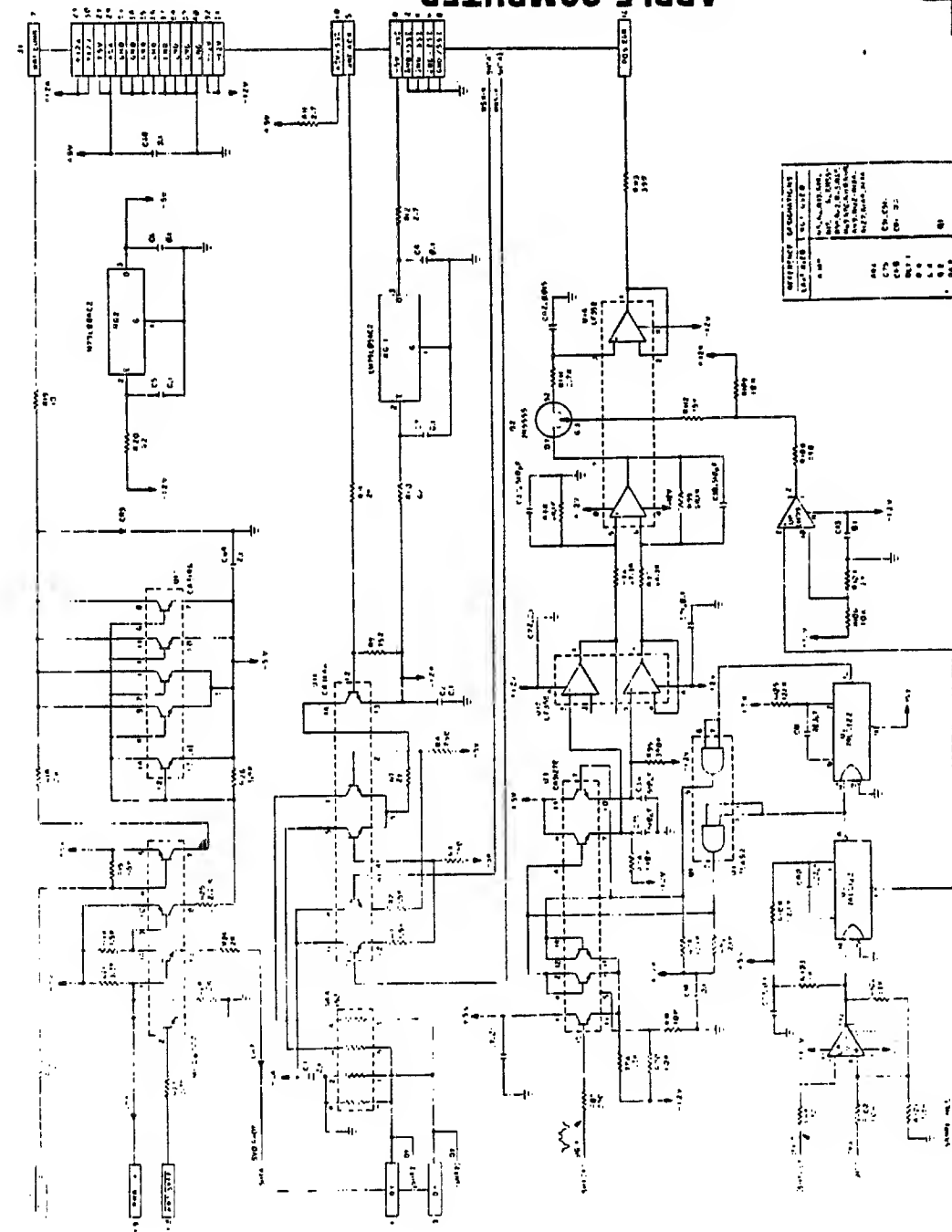
NEXT RESPONSE : EXPL0D1 NEXT KEY :  
DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0929  
EXPL0D1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

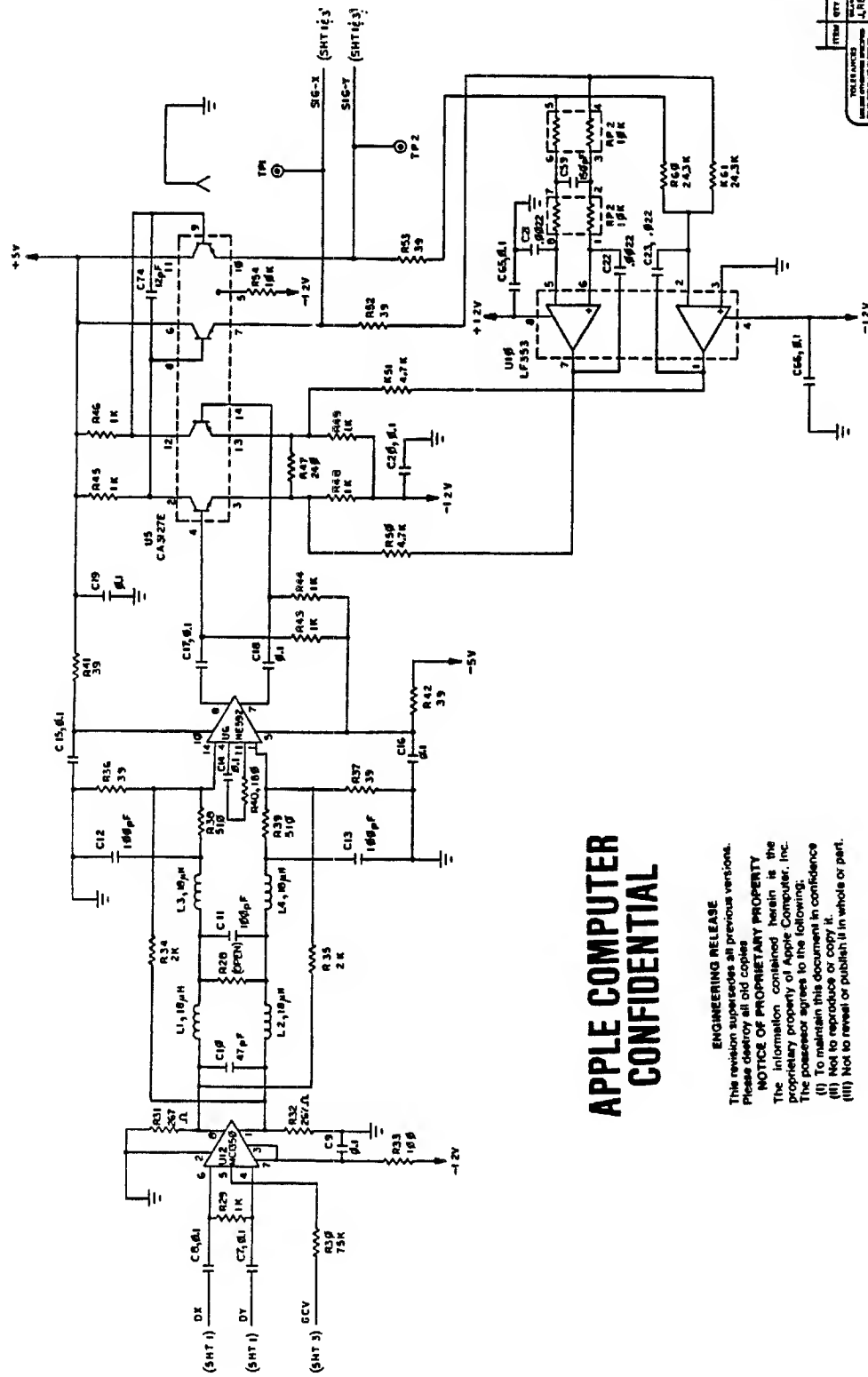
ASSY 677-0104 EFF: DATE SER NO LOT NO  
PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT  
ABBREVIATED --EFFECTIVITY-- F  
ITEM COMPONENT DESCRIPTION MOD TYP FROM THRU Q QTY PER ASSY UOM X  
106 101-4105 RES 1M OHM 1/4W 5% ME D 121583 123199 N 1.000 EA  
107 108-4703 RES 4.70K OHM 1/4W ME D 010101 041584 N 0.000 EA  
108 108-6812 RES 681 OHM 1/4W 1 ME D 050184 062484 N 0.000 EA  
109 101-4181 RES 180 OHM 1/4W 5 ME D 050184 123199 N 1.000 EA  
110 108-2213 RES 2.21K OHM 1/4W ME D 050184 123199 N 1.000 EA  
111 305-0123 IC,74LS123 ME D 052184 123199 N 2.000 EA  
999 050-5028 SCHEMATIC,R/W BD., ME D 121583 123199 N 0.000 EA



REFERENCE QUANTITIES	
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0.100	0.100



**NOTE**



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ITEM	QTY	PART NUMBER	DESCRIPTION
U1	1	74180	74180
U2	1	74181	74181
U3	1	74182	74182
U4	1	74183	74183
U5	1	74184	74184
U6	1	74185	74185
U7	1	74186	74186
U8	1	74187	74187
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ITEM	QTY	PART NUMBER	DESCRIPTION
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U93	1	74272	74272
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U96	1	74275	74275
U97	1	74276	74276
U98	1	74277	74277
U99	1	74278	74278
U100	1	74279	74279

APPLE COMPUTER, INC.  
SHEET 2 OF 4  
D 050-5028-K

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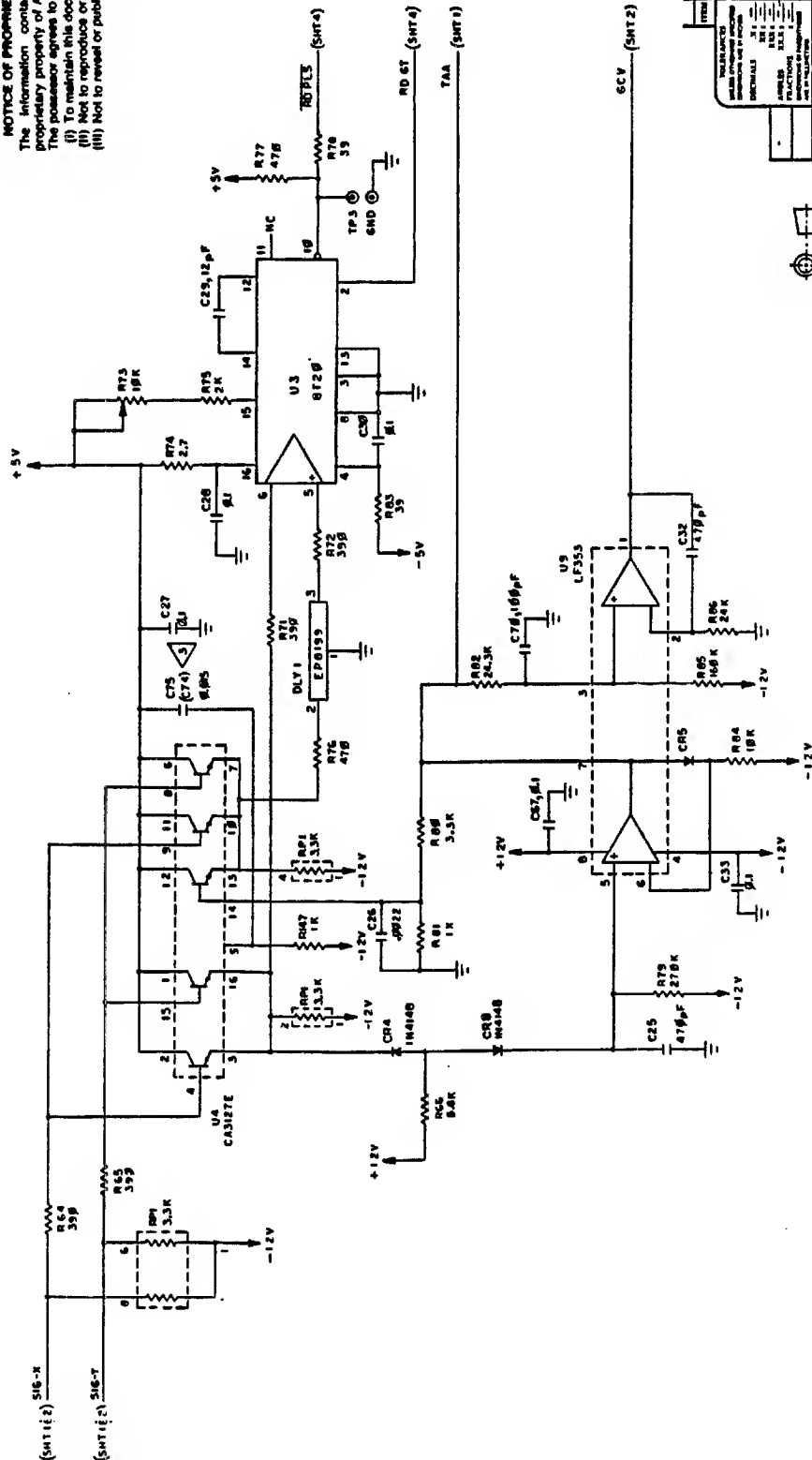
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REVISIONS

1. 10-2-83

2. 10-2-83

3. 10-2-83

4. 10-2-83

5. 10-2-83

6. 10-2-83

7. 10-2-83

8. 10-2-83

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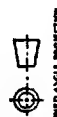
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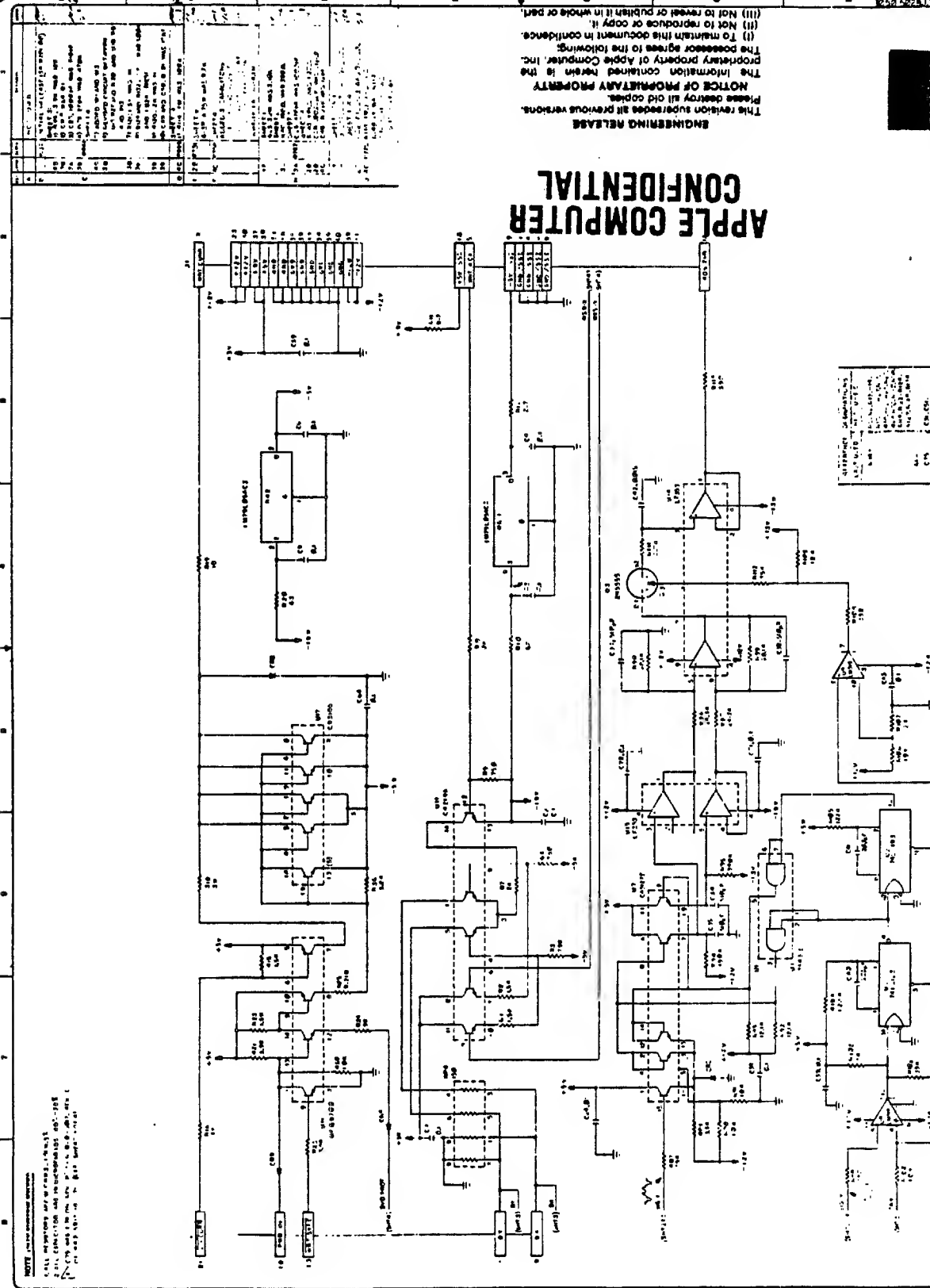
Apple Computer Inc.	
SCHEMATIC, R/W BOARD, WIDGET	
DATE	10-2-83
SCALE	1:1
SHEET 3 OF 4	



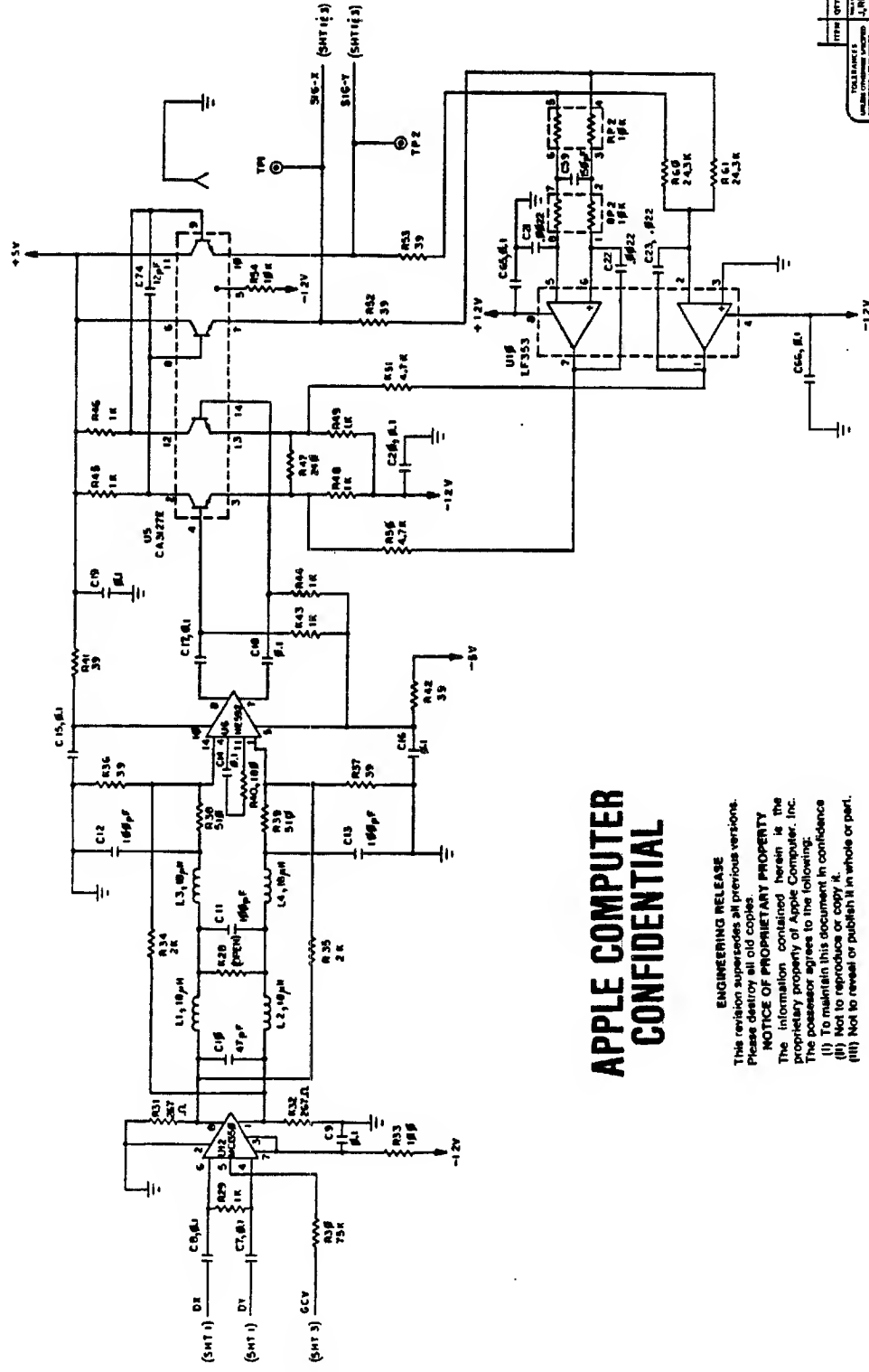
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DRAWING NUMBER		REV		DATE	
050-5028-1		2		10/1/77	
DESCRIPTION					
Apple Computer Inc.					
TITLE					
SCHEMATIC, R/W BOARD, WIDSET					
REV					
D 050-5028-1					
DATE					
10/1/77					
PAGE					
1					
SHEET 2 of 4					

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DATE	TIME	LOCATION	REMARKS
			SEE SHEET 1




ITEM	QTY	PRICE	UNIT	DESCRIPTION
 <b>apple computer inc.</b>				
TITLE <b>SCHEMATIC, R/W BOARD, WIDGET</b>				
TLD <b>1</b>				
DRAWING NUMBER <b>0500-5020-3</b>				
SCALE <b>1:1</b>				
SHEET <b>3</b> OF <b>4</b>				

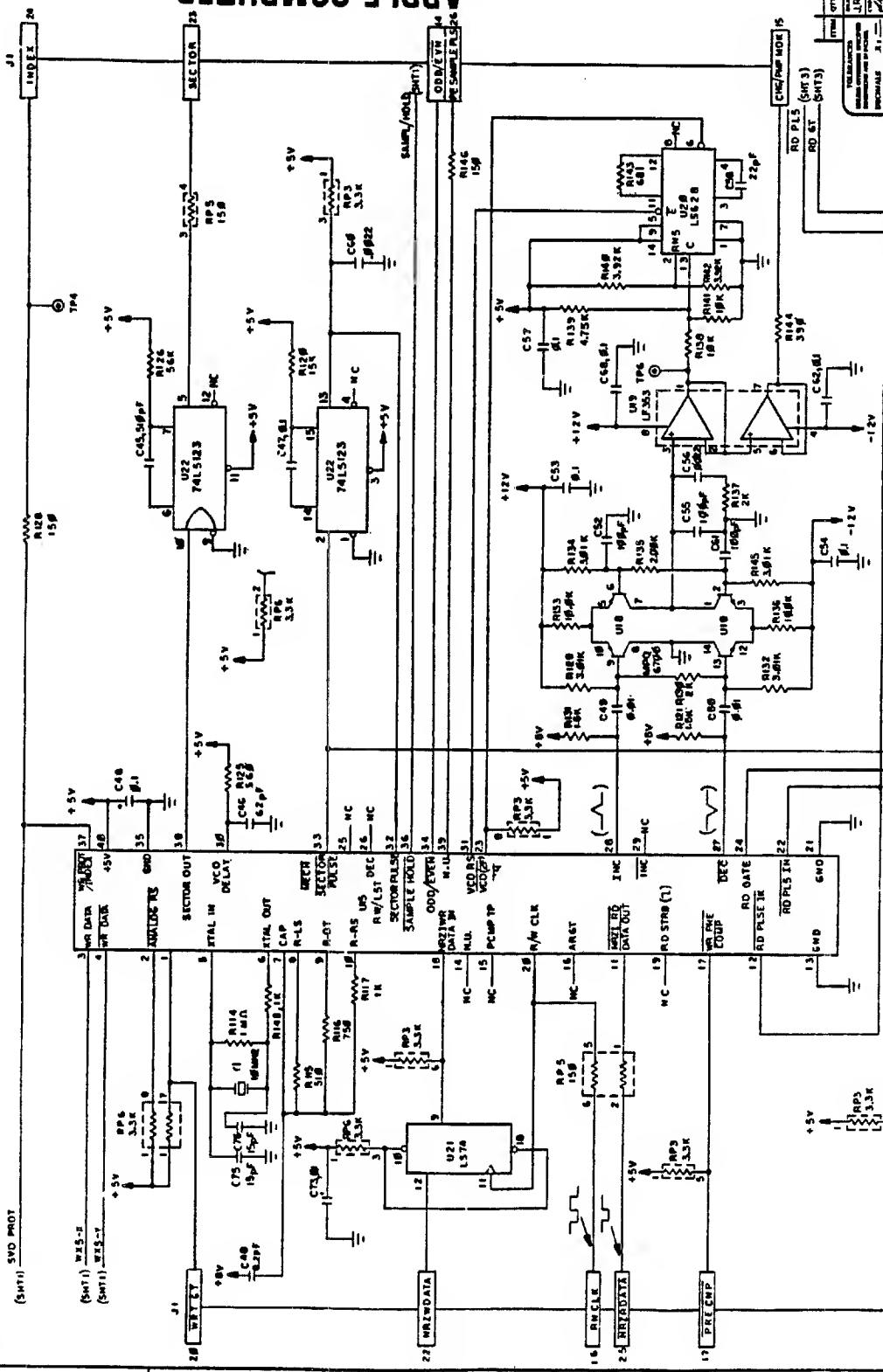
FIGURE 10-10 TAPERED HOLE PROJECTION

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050-5022-1  
DATE  
10-24-83  
BY  
J. L. HARRIS  
CHECKED BY  
J. L. HARRIS  
APPROVED BY  
J. L. HARRIS  
TITLE  
SCHEMATIC,  
R/W BOARD,  
WIDGET  
PART NUMBER  
050-5028-1  
SCALE  
1:1  
SHEET 4 OF 4

ITEM	QTY	DESCRIPTION
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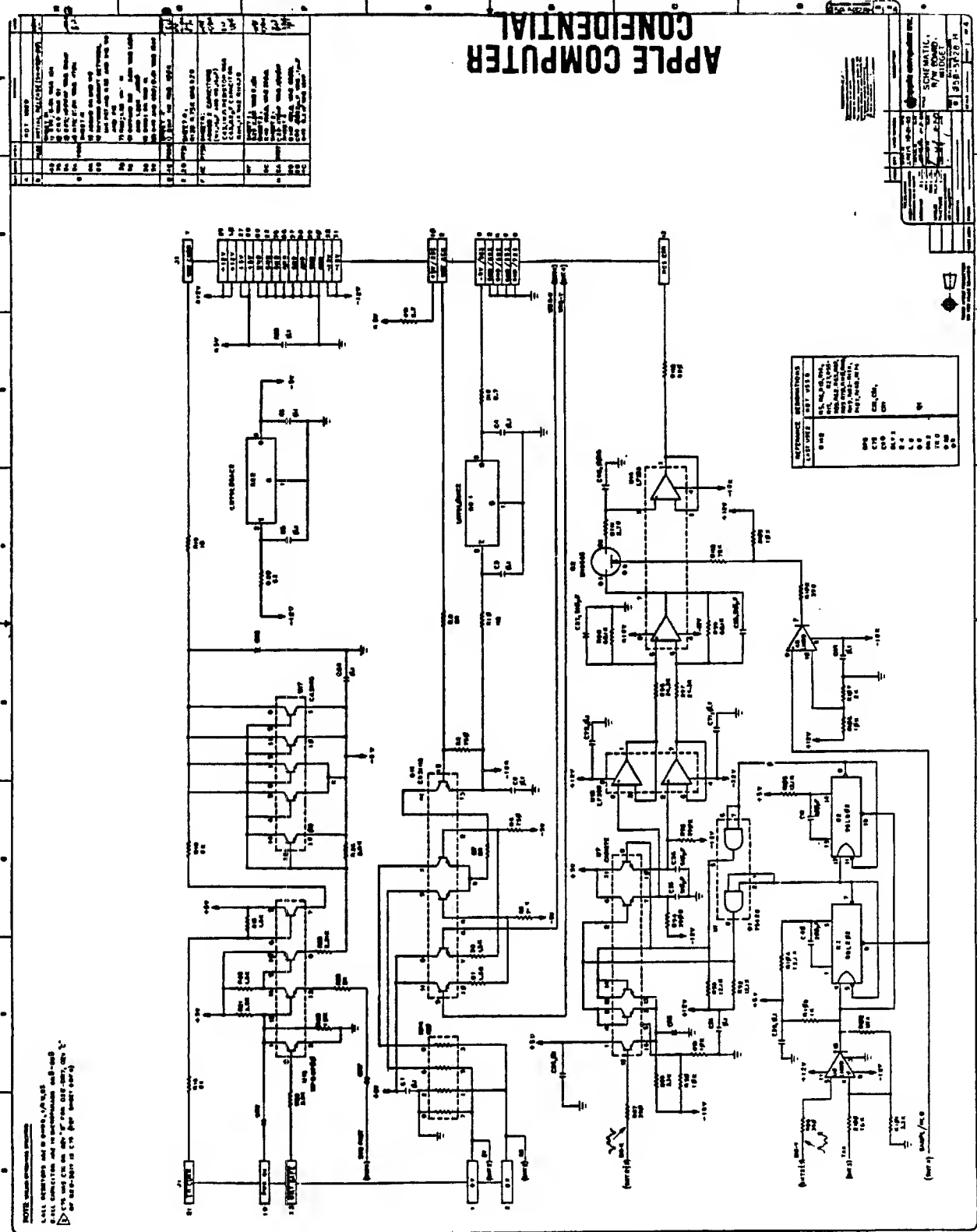


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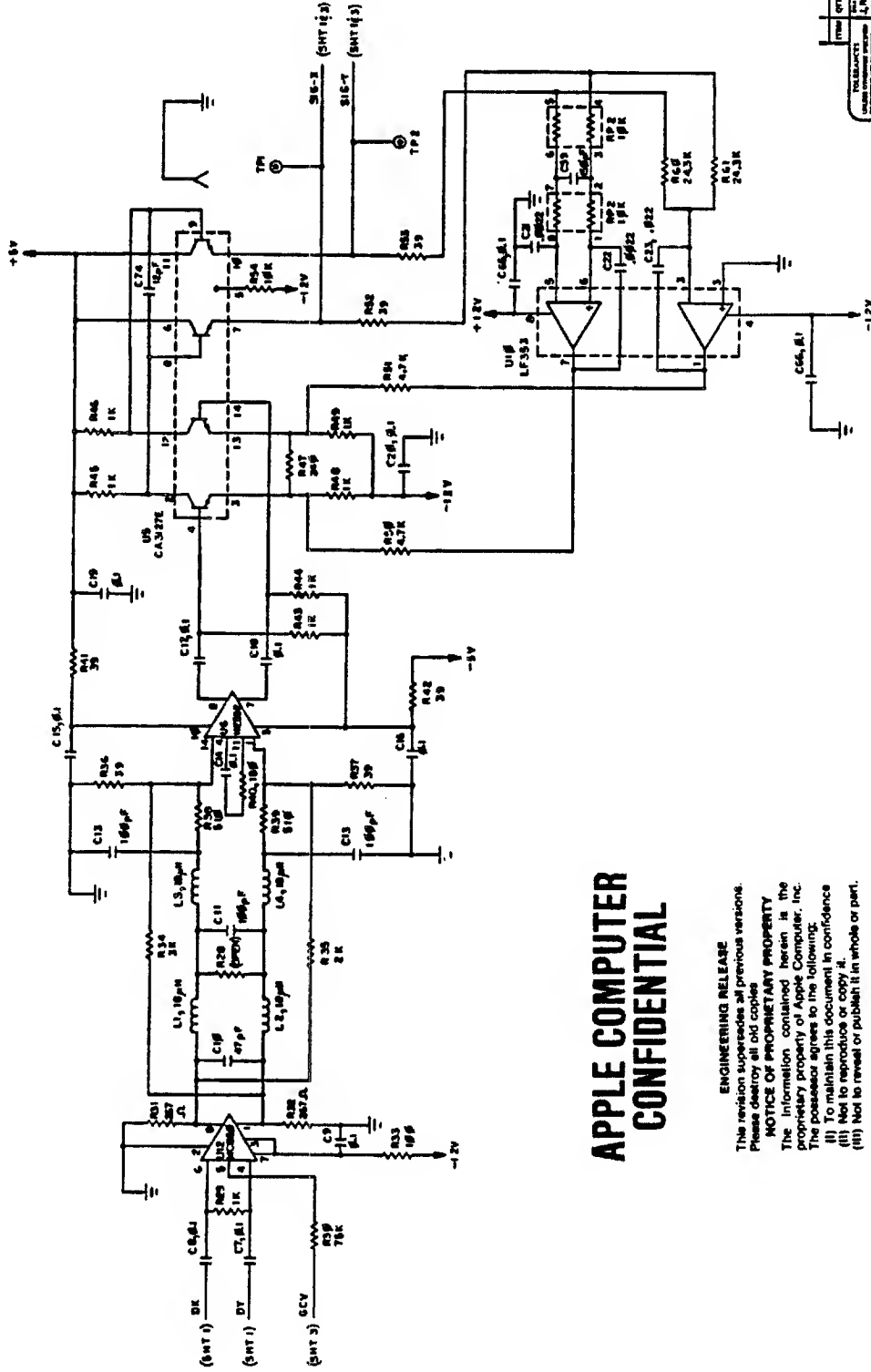
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REF	QTY	DESCRIPTION	UNIT
1	1	74180 BCD-DEC CONV	IC
2	1	74181 ALU	IC
3	1	74182 BCD-DEC CONV	IC
4	1	74183 BCD-DEC CONV	IC
5	1	74184 BCD-DEC CONV	IC
6	1	74185 BCD-DEC CONV	IC
7	1	74186 BCD-DEC CONV	IC
8	1	74187 BCD-DEC CONV	IC
9	1	74188 BCD-DEC CONV	IC
10	1	74189 BCD-DEC CONV	IC
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NOTE: ALL DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE SPECIFIED.  
ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.  
ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.  
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DATE	REV	BY	CHKD	APP'D
10/1/77	1	J. H.		
THE APPLE COMPUTER WIDGET				
R/W BOARD				
WIDGET				
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SCALE: 1/2" = 1"				
SHEET 2 OF 4				

**NOTE: UNLESS OTHERWISE SPECIFIED.**

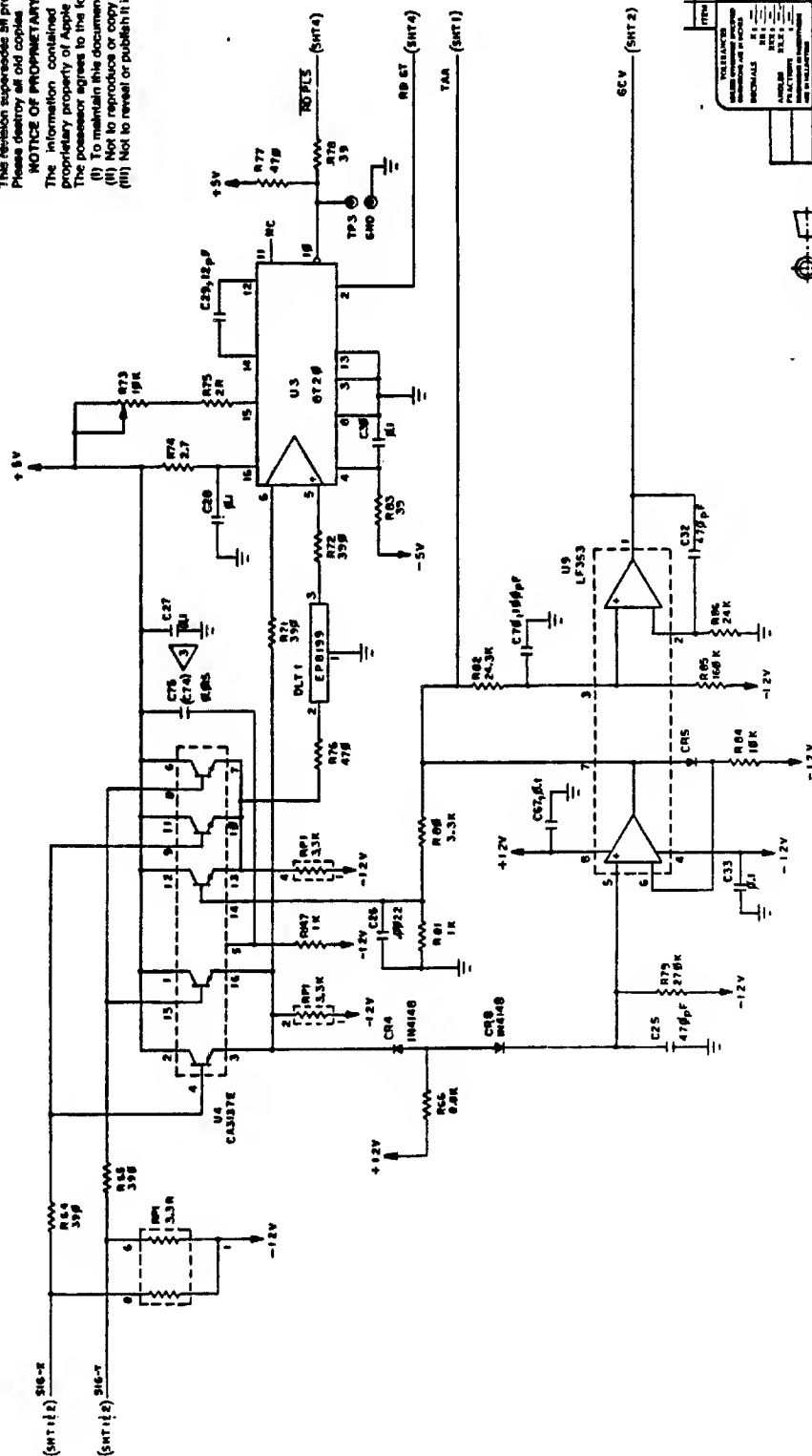
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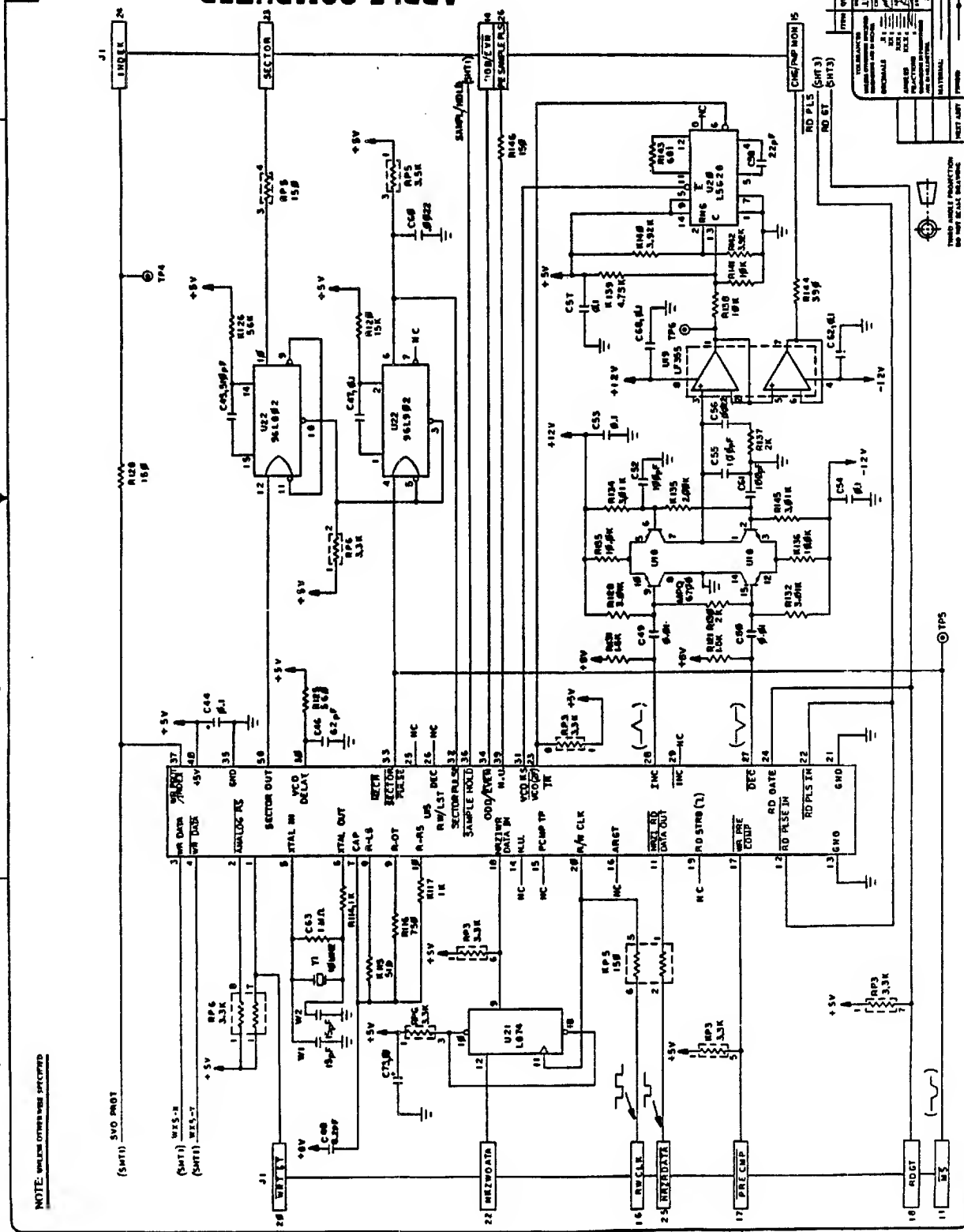
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Technical drawing of a flange. It shows a top view (a circle with a central hole and a circular pattern of holes) and a side view (a trapezoid with a central hole and a circular pattern of holes).

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1	11/27/77	SEE SHEET 1

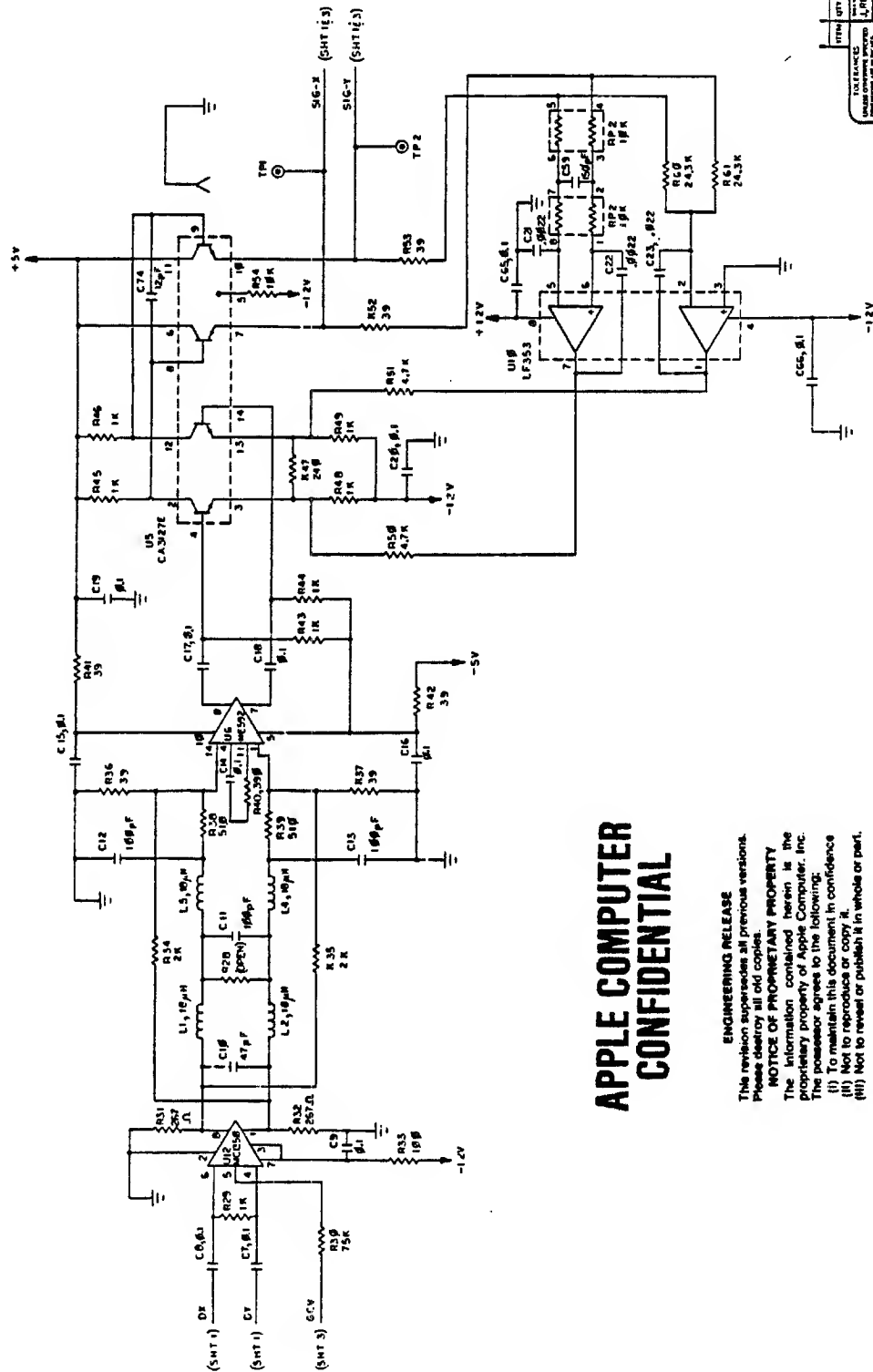


Apple Computer Inc.	
SCHEMATIC R/W BOARD WIDGET	
DATE: 11/27/77	REV: 1
DESIGNED BY: [Signature]	CHECKED BY: [Signature]
APPROVED BY: [Signature]	DATE: 11/27/77
SCALE: 1:1	
SHEET 4 OF 4	

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NOTE: 1. SEE DRAWING 05028-F



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U3	1	741	OP-AMP
U4	1	741	OP-AMP
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DESIGNED BY	W. J. J.
CHECKED BY	W. J. J.
APPROVED BY	W. J. J.
DATE	10-26-83
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CHECKED BY	W. J. J.
APPROVED BY	W. J. J.
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APPROVED BY	W. J. J.

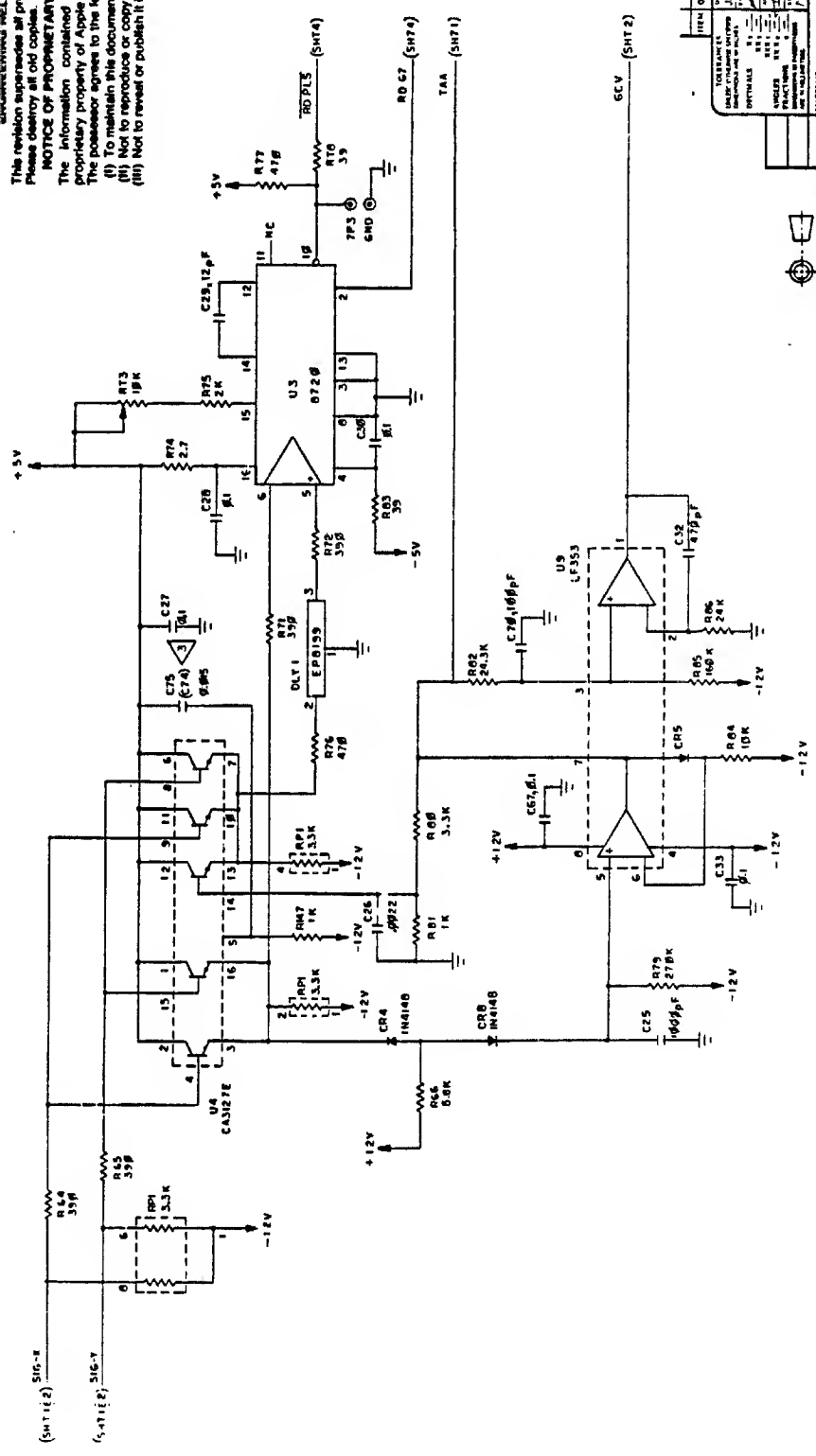
NOTE: UNLESS OTHERWISE SPECIFIED

REV	DATE	BY	CHKD
1			
2			
3			
4			

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DRAWING NUMBER  
050-5028-F

apple computer inc.	
SHEET 3 OF 4	
R/W BOARD, WIDGET	
D 050-5028-F	
DATE: 10/27/83	
BY: JREIS	
CHKD: JREIS	
APPROVED: JREIS	
MATERIAL: 100% C300	
REVISION: 1	
SCALE: 1:1	
SHEET 3 OF 4	



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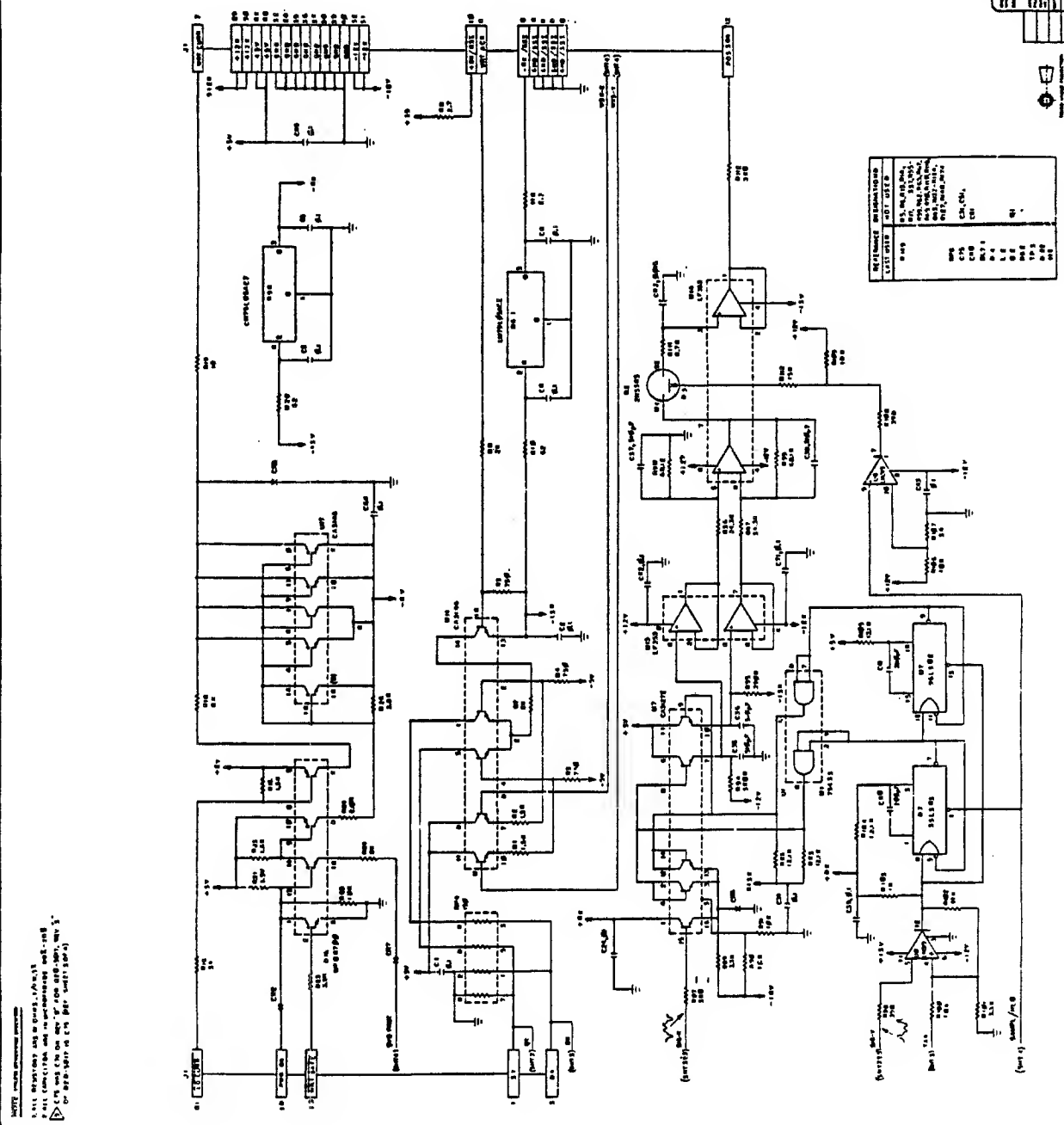




# APPLE COMPUTER

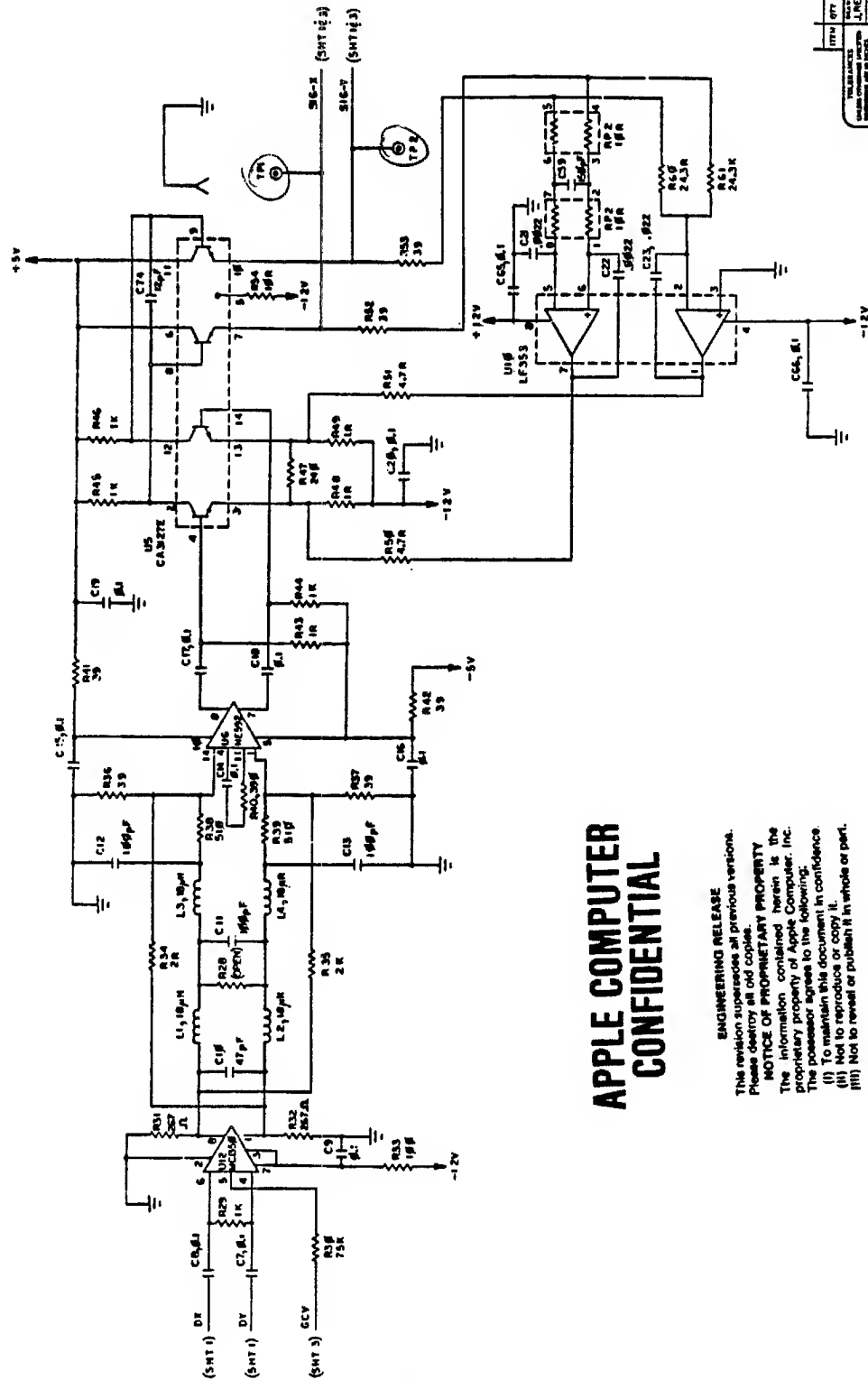
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Rev	By	Date	Description
1	W. D. K.	7/1/77	Initial Design
2	W. D. K.	7/1/77	Revise Design
3	W. D. K.	7/1/77	Revise Design
4	W. D. K.	7/1/77	Revise Design
5	W. D. K.	7/1/77	Revise Design
6	W. D. K.	7/1/77	Revise Design
7	W. D. K.	7/1/77	Revise Design
8	W. D. K.	7/1/77	Revise Design
9	W. D. K.	7/1/77	Revise Design
10	W. D. K.	7/1/77	Revise Design



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1000 Apple Avenue  
Cupertino, CA 95014  
Tel: 415/966-3447  
Fax: 415/966-3448

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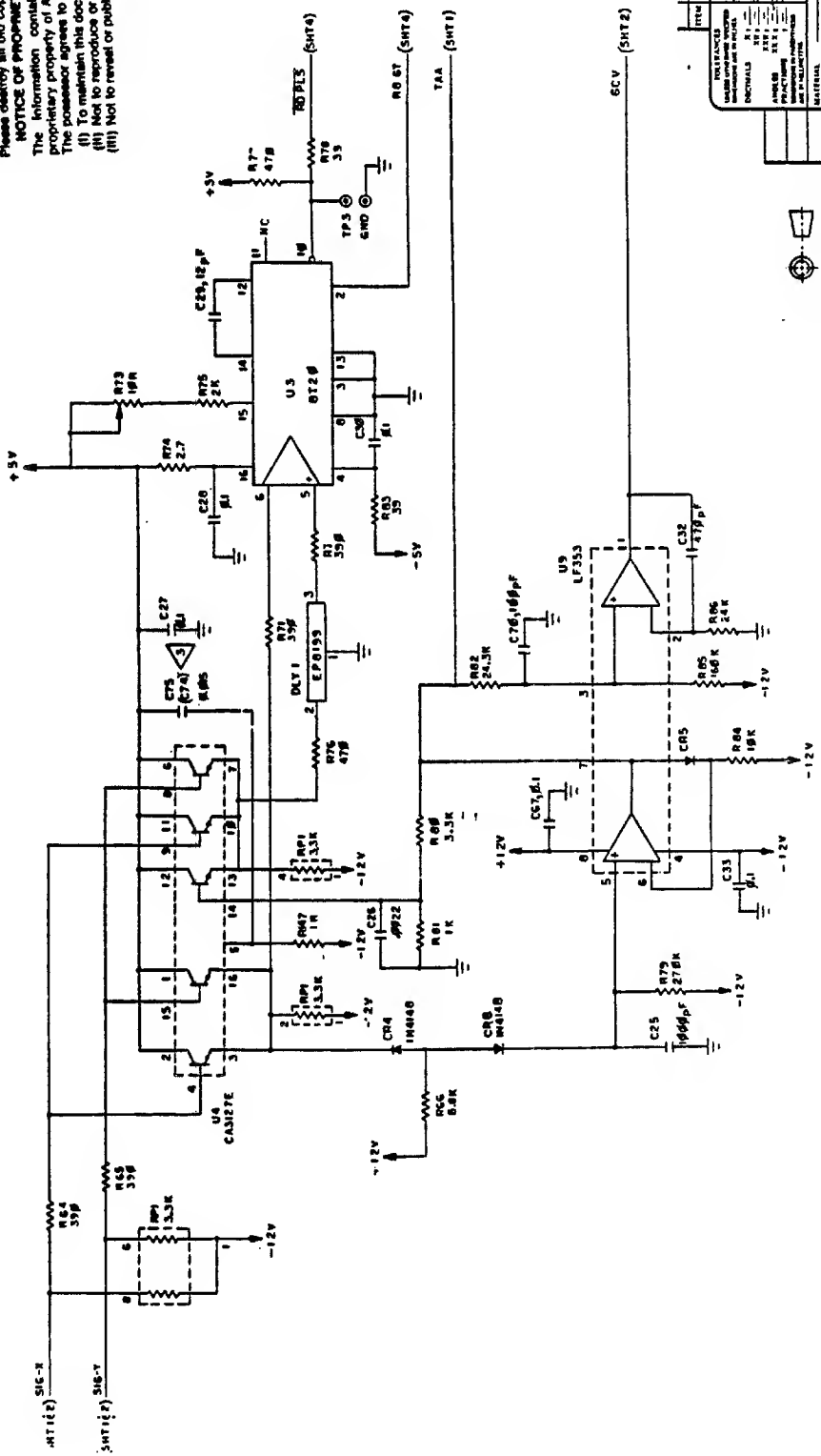
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REV	DATE	BY	CHKD	DESCRIPTION
1				SEE SHEET 1

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050-5028-E

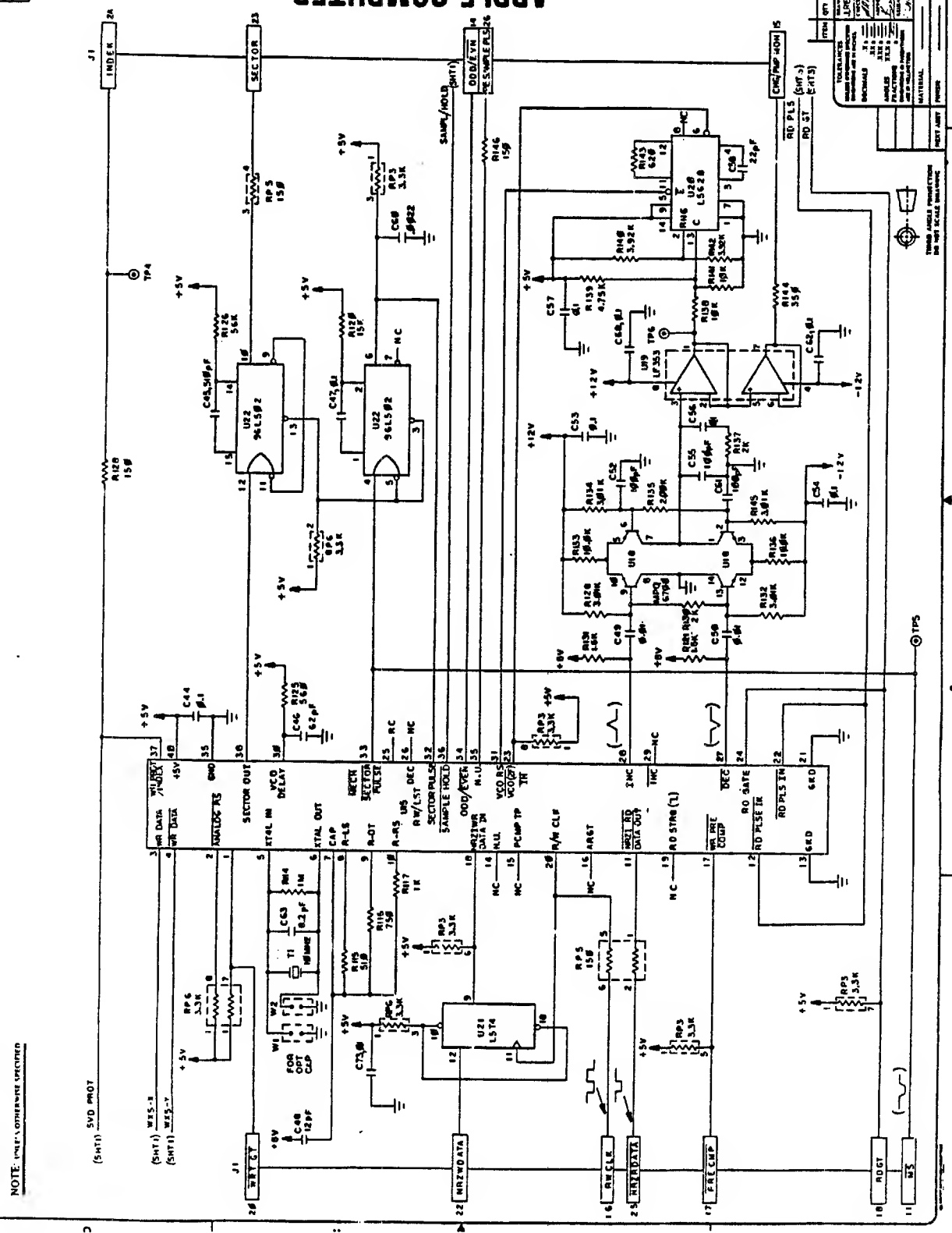
Apple Computer Inc.	
TITLE	SCHEMATIC, R/W BOARD, WIDGET
DATE	1/11/77
SCALE	3/4
REV	1
DESCRIPTION	SEE SHEET 1



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apple computer inc	
Schematic R/W BOARD	
DATE	REV
10-24-83	1
DESIGNED BY	DATE
W. J. ...	10-24-83
CHECKED BY	DATE
...	...
PART NUMBER	
TYPE	REV
...	...
TITLE	
R/W BOARD	
SCALE	
SHEET 4 OF 4	



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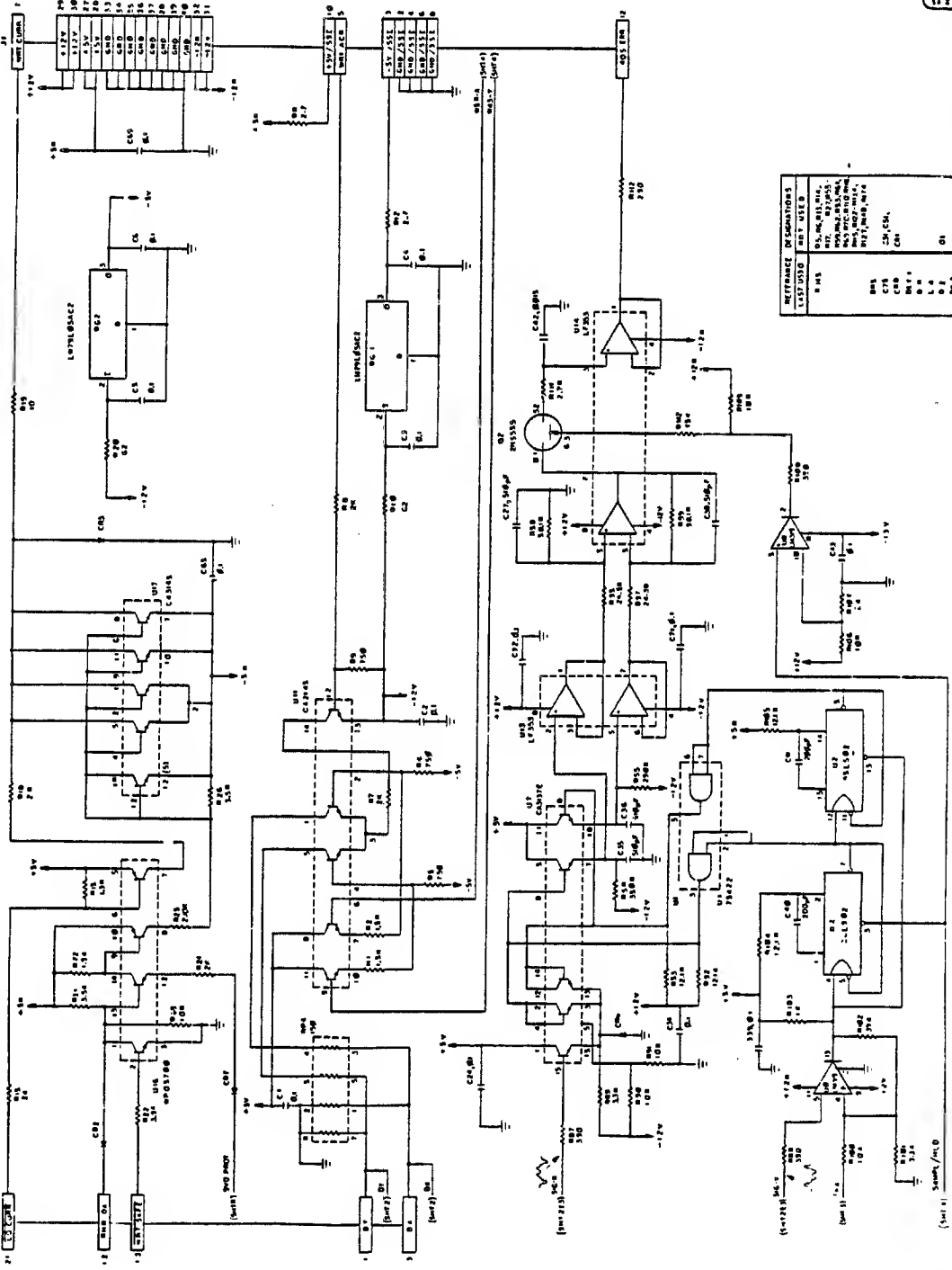
NOTE: SYSTEM OPERATING INSTRUCTIONS

1. ALL RESISTORS ARE IN OHMS, UNLESS OTHERWISE SPECIFIED.  
2. ALL CAPACITORS ARE IN MICROFARADS, UNLESS OTHERWISE SPECIFIED.  
3. C75 AND C76 ARE 50V 1000PF 5% TOL. 1000PF 5% TOL. 1000PF 5% TOL.

REV.	DATE	DESCRIPTION
1	10/10/74	INITIAL DESIGN
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3	12/10/74	REVISION 2
4	01/10/75	REVISION 3
5	02/10/75	REVISION 4
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97	10/10/82	REVISION 96
98	11/10/82	REVISION 97
99	12/10/82	REVISION 98
100	01/10/83	REVISION 99
101	02/10/83	REVISION 100

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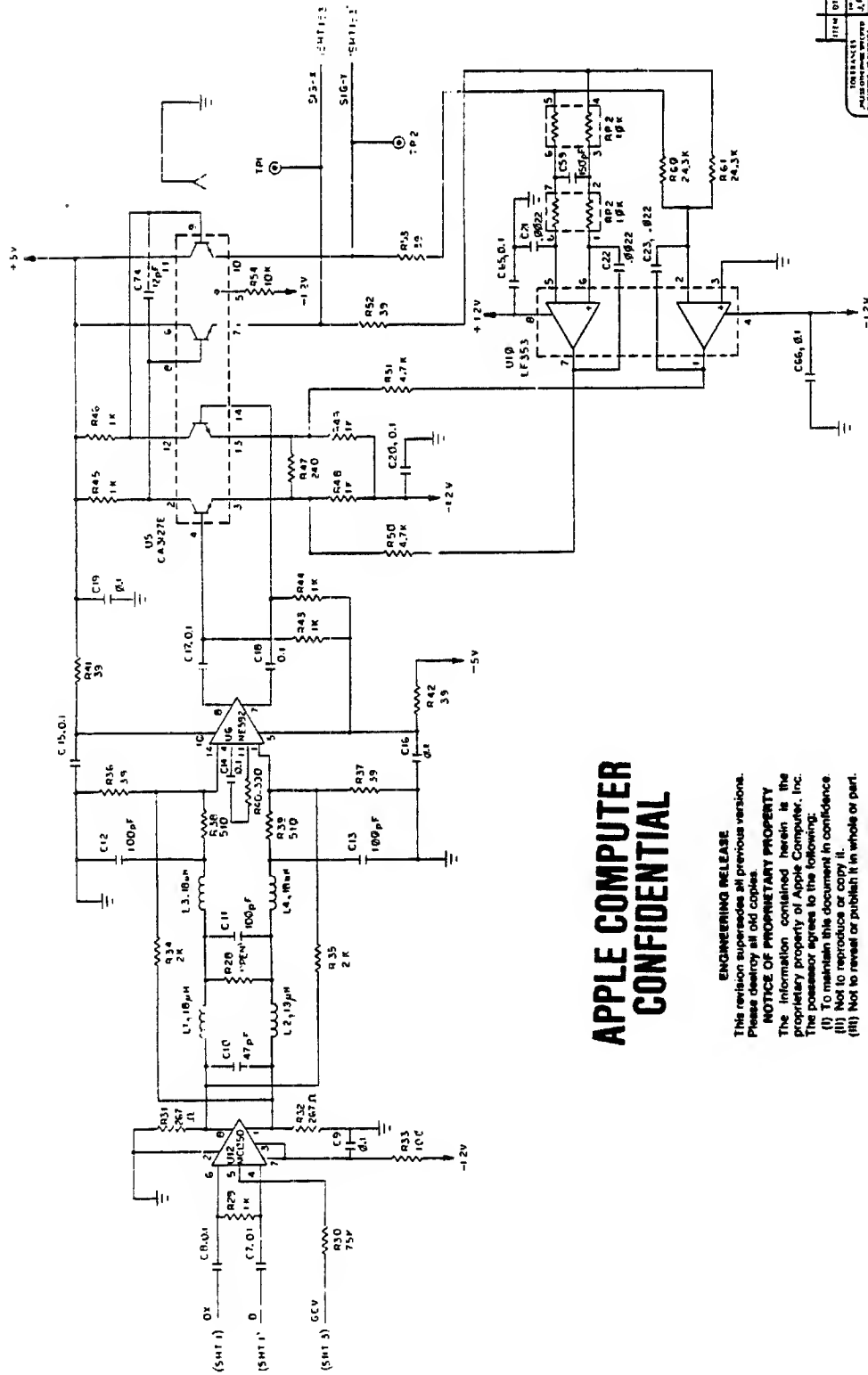
Apple Computer, Inc.  
Schematic  
R/W CARD  
050-5028-D  
REV. 10/10/74



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NOTE: EXHIBIT 100-100000-000000



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2	1	REIS 10-26-83	REVISION
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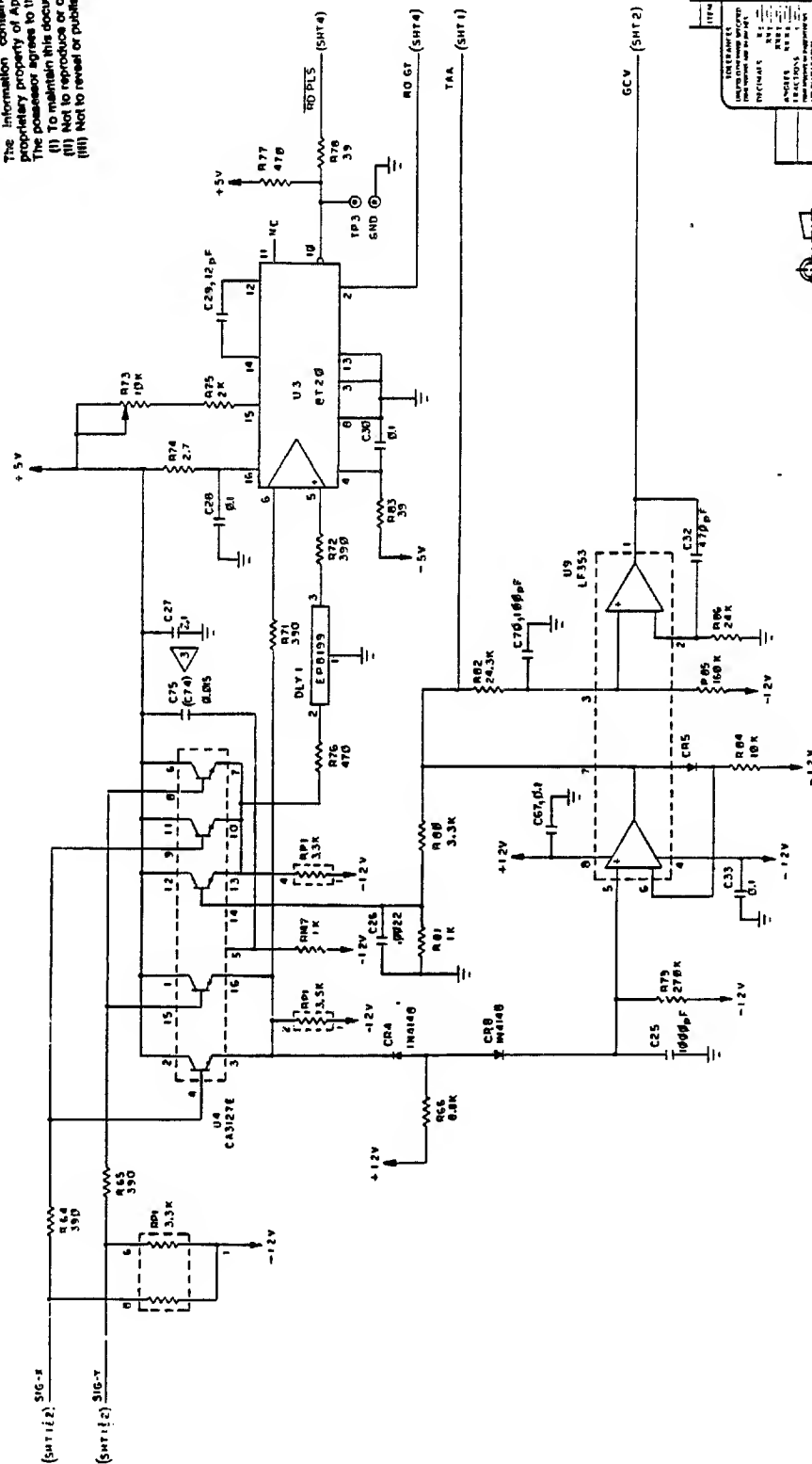
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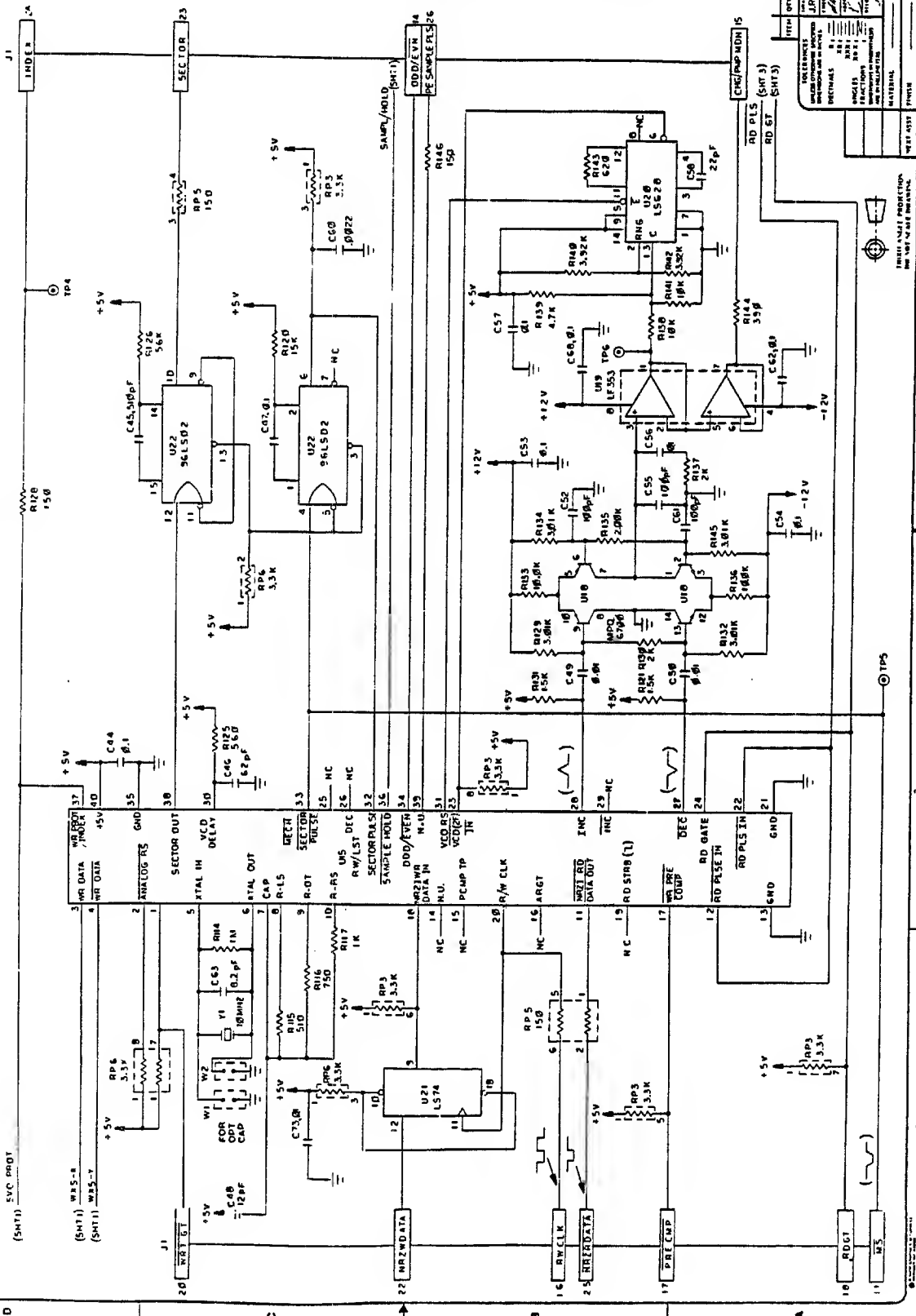


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# APPLE COMPUTER

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R/W	R/W
CHK	CHK
APP	APP
DES	DES
REV	REV
ITEM	ITEM
QTY	QTY
UNIT	UNIT
PRICE	PRICE
TOTAL	TOTAL



NOTE: UNLESS OTHERWISE SPECIFIED

SEE SHEET 1



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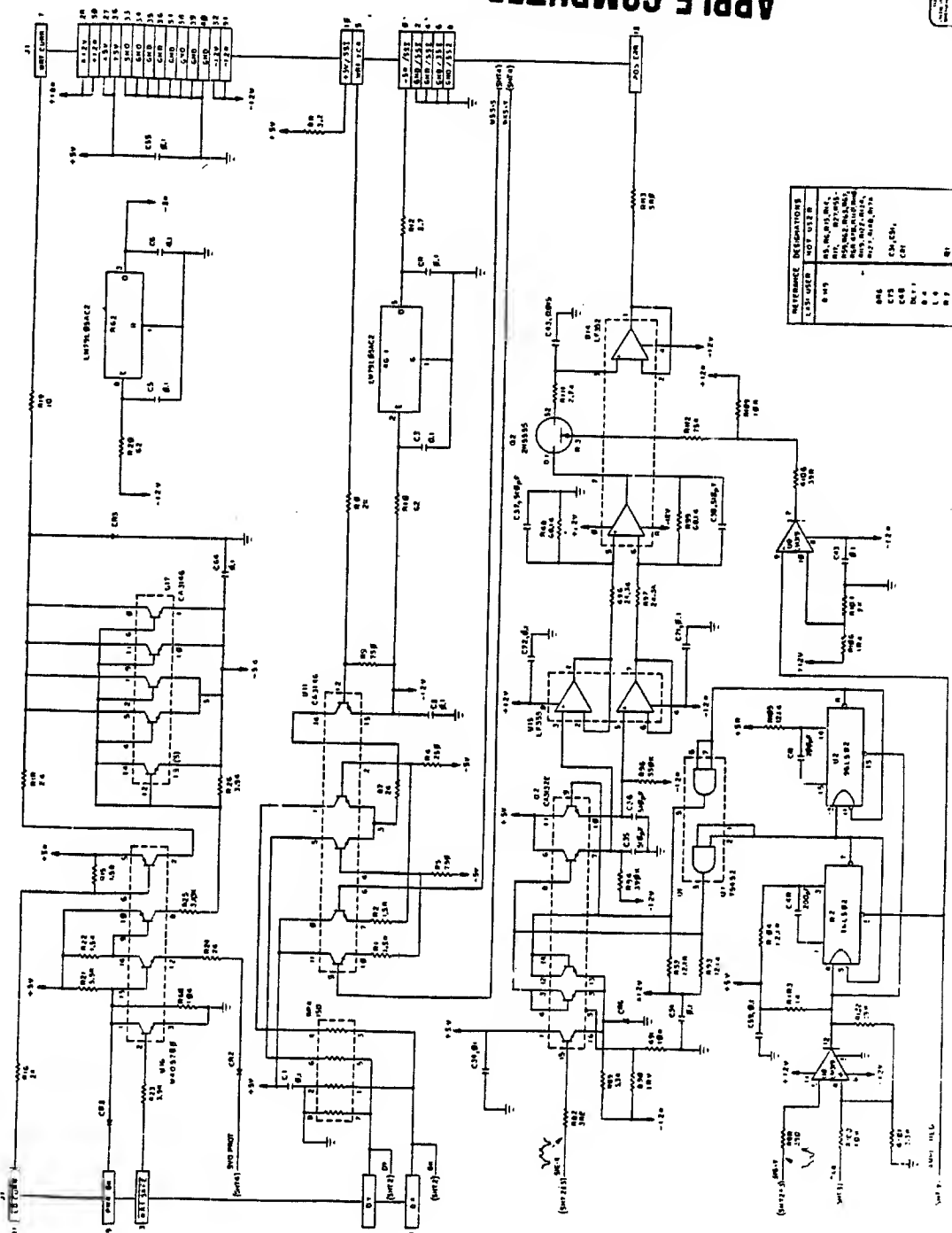
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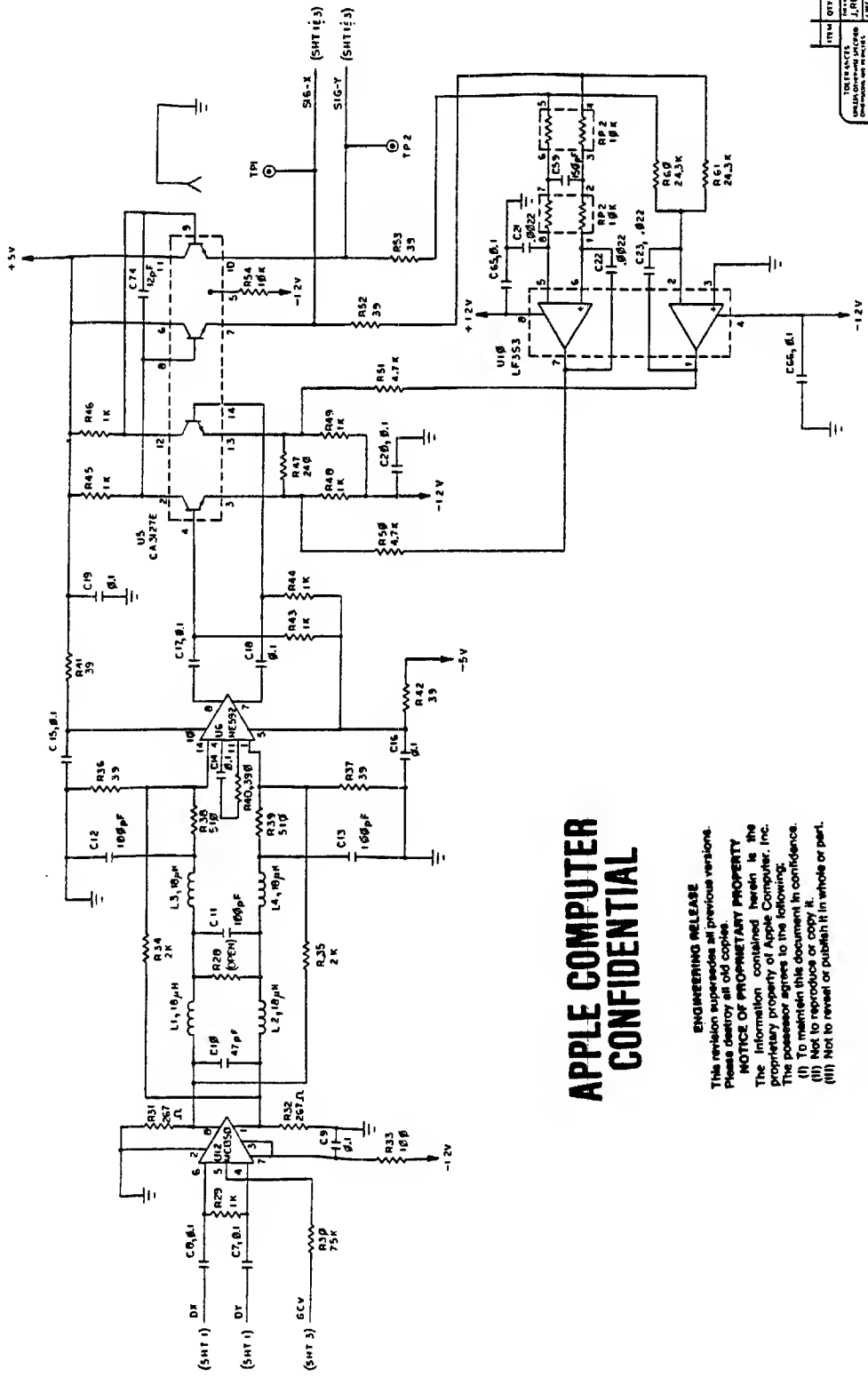
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REFERENCE	DESIGNATIONS
LAST USER	NOV 03 20
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BY: JREIS  
CHECKED: JREIS  
APPROVED: JREIS  
REVISION: 1  
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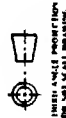
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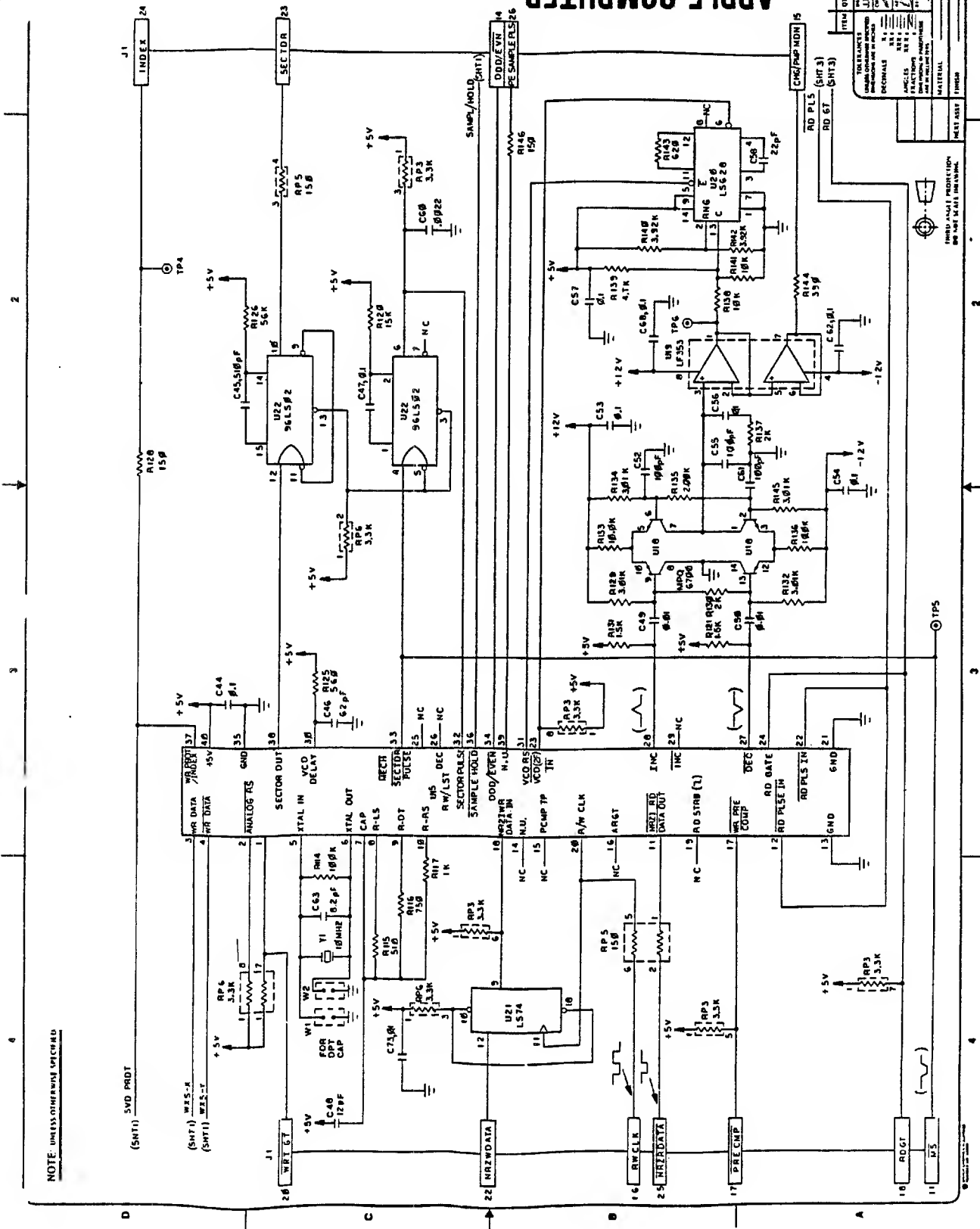
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1	1	EA	IBM compatible TITLE SCHEMATIC, R/W BOARD, WIDGET
THE FOLLOWING INFORMATION IS CONTAINED HEREIN IS UNCLASSIFIED DATE 11-20-01 BY 60322 UCBAW/STP			SIZE 11x17 SHEETS 1 SCALE 1/8" = 1'-0" DRAWING NO. 1050-5026-C
THE FOLLOWING INFORMATION IS CONTAINED HEREIN IS UNCLASSIFIED DATE 11-20-01 BY 60322 UCBAW/STP			SIZE 11x17 SHEETS 1 SCALE 1/8" = 1'-0" DRAWING NO. 1050-5026-C



**NOTE: UNLESS OTHERWISE SPECIFIED**

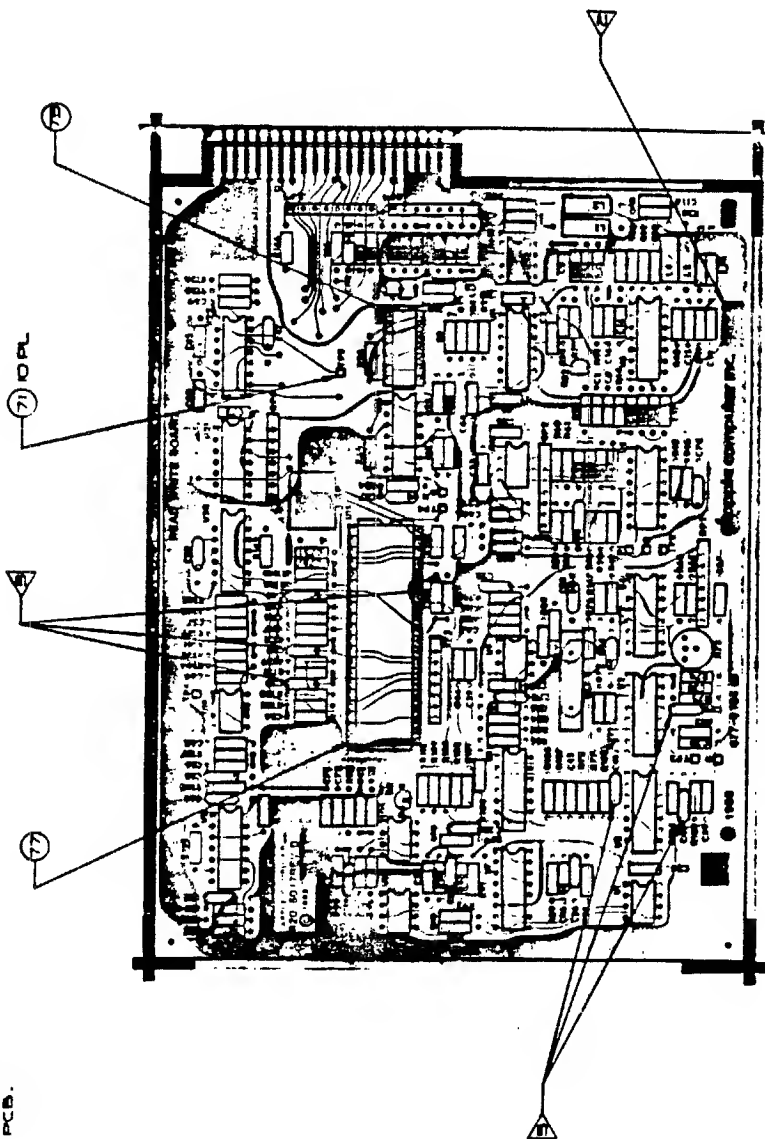
NOTE: THIS CIRCUIT IS NOT PROTECTED

1. REFERENCE SCHEMATIC : 050-30208 .

2. STAMP DATE TESTED GOOD .

3. CAPACITORS C29, 40, 41, 42, 43 & 50 ARE TO BE INSERTED NO HIGHER THAN .30 I .05 INCH ABOVE PCB.

DATE	TIME	BY	REMARKS	INITIALS
			RECEIVED AND FORWARDED WITH CHANGE	
			BOM CHANGE ONLY	30 48 194



SEE SEPARATE BILL OF MATL: 677-0104

**MAX COMPONENT CLEARANCE**

THE FOLLOWING INFORMATION IS FOR THE OFFICE OF THE ATTORNEY GENERAL ONLY. IT IS NOT TO BE RELEASED TO THE PUBLIC.		DATE OF BIRTH: 12-15-42 PLACE OF BIRTH: NEW YORK, N.Y.		DATE OF DEATH: 12-15-42 PLACE OF DEATH: NEW YORK, N.Y.	
NAME: JAMES EARL RAY ALIAS: "JAMES EARL RAY" SEX: M RACE: W HEIGHT: 5-10 WEIGHT: 160 HAIR: BRN EYES: BLU BLOOD: O- TATTOO: NONE SCARS: NONE MARKS: NONE OTHER: NONE		SOCIAL SECURITY: 1-12-42 MARITAL STATUS: SINGLE OCCUPATION: NONE EDUCATION: HIGH SCHOOL RELIGION: NONE POLITICAL AFFILIATION: NONE MILITARY SERVICE: NONE CRIMINAL RECORD: NONE OTHER: NONE		DATE OF ARREST: 12-15-42 PLACE OF ARREST: NEW YORK, N.Y.	

ASSY 677-0105	EFF: DATE	SER NO	LOT NO	
PLT	MODEL	SEQ(I,C) 1	SKIP TO ITEM/COMPONENT	
TM COMPONENT	ABBREVIATED	DESCRIPTION	MOD TYP FROM THRU	Q QTY PER ASSY UOM X
001 353-0319	IC, HIGH SPEED DUA	ME D 090183 123199	N	4.000 EA
002 359-0165	IC, L165 POWER OP	ME D 090183 123199	N	2.000 EA
003 359-0291	IC, L291, 5 BIT D.	ME D 090183 123199	N	1.000 EA
004 353-0074	IC, TL074 LOW NOISE	ME D 090183 123199	N	1.000 EA
005 353-0444	IC, LF444, 4 SECTI	ME D 090183 123199	N	2.000 EA
006 359-4250	IC, 4250 PROGRAMMA	ME D 090183 123199	N	2.000 EA
007 353-0001	IC, 4-CHANNEL PROGR	ME D 090183 123199	N	3.000 EA
008 327-0452	IC, 75452, DUAL PERF	ME D 090183 123199	N	1.000 EA
009 353-0005	IC REG. +5V 100MA	ME D 090183 123199	N	1.000 EA
010 305-0003	IC, 74LS03	ME D 090183 123199	N	2.000 EA
011 305-0123	IC, 74LS123	ME D 090183 123199	N	1.000 EA
012 331-0086	IC, 74HC86, QUAD EXC	ME D 090183 123199	N	1.000 EA
EXPLOSION LEVEL : 1				

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE \*\*

ASSY 677-0105	EFF: DATE	SER NO	LOT NO	
PLT	MODEL	SEQ(I,C) 1	SKIP TO ITEM/COMPONENT	
ITM COMPONENT	ABBREVIATED	DESCRIPTION	MOD TYP FROM THRU	Q QTY PER ASSY UOM X
014 342-0260	IC, MICRO-P W/ROM C	ME D 090183 112084	N	1.000 EA
015 372-3904	TRANSISTOR, NPN SW.	ME D 090183 123199	N	8.000 EA
016 372-5640	TRANSISTOR, N-CHAN	ME D 090183 123199	N	1.000 EA
017 371-4148	DIODE FAST SWITCH	ME D 090183 123199	N	11.000 EA
018 371-5236	DIODE ZENER 1N5236	ME D 090183 123199	N	2.000 EA
019 371-5233	DIODE ZENER 1N5233	ME D 090183 123199	N	2.000 EA
020 101-8100	RES 10 OHM 1/8W 5%	ME D 090183 123199	N	2.000 EA
021 101-8101	RES 100 OHM 1/8W 5%	ME D 090183 123199	N	2.000 EA
022 101-8151	RES 150 OHM 1/8W 5%	ME D 090183 123199	N	1.000 EA
023 101-8102	RES 1K OHM 1/8W 5%	ME D 090183 123199	N	6.000 EA
024 101-8432	RES 4.3K OHM 1/8W	ME D 090183 123199	N	2.000 EA
025 101-8472	RES 4.7K OHM 1/8W	ME D 090183 123199	N	2.000 EA
EXPLOSION LEVEL : 1				

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0932  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0105 EFF: DATE SER NO LOT NO  
T MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT  
ITEM COMPONENT ABBREVIATED --EFFECTIVITY-- F E  
DESCRIPTION MOD TYP FROM THRU Q QTY PER ASSY UOM X  
026 101-8512 RES 5.1K OHM 1/8W ME D 090183 123199 N 2.000 EA  
027 101-8752 RES 7.5K OHM 1/8W ME D 090183 123199 N 2.000 EA  
028 101-8103 RES 10K OHM 1/8W 5 ME D 110283 123199 N 9.000 EA  
029 101-8113 RES 11K OHM 1/8W 5 ME D 090183 123199 N 1.000 EA  
030 101-8203 RES 20K OHM 1/8W 5 ME D 090183 123199 N 1.000 EA  
031 101-8393 RES 39K OHM 1/8 5% ME D 090183 123199 N 2.000 EA  
032 101-8683 RES 68K OHM 1/8W 5 ME D 090183 123199 N 1.000 EA  
033 101-8104 RES 100K OHM 1/8W ME D 090183 123199 N 1.000 EA  
034 101-8274 RES 270K OHM 1/8W ME D 090183 123199 N 1.000 EA  
035 101-8364 RES 360K OHM 1/8W ME D 090183 123199 N 2.000 EA  
036 101-8824 RES 820K OHM 1/8W ME D 090183 123199 N 2.000 EA  
037 103-0500 RES 2M OHM 1/8W 5% ME D 090183 123199 N 2.000 EA  
EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0933  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0105 EFF: DATE SER NO LOT NO  
TLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT  
1 COMPONENT ABBREVIATED --EFFECTIVITY-- F E  
DESCRIPTION MOD TYP FROM THRU Q QTY PER ASSY UOM X  
038 106-3012 RES 301 OHMS 1/8W ME D 090183 123199 N 2.000 EA  
039 106-6982 RES 698 OHMS 1/8W ME D 090183 123199 N 2.000 EA  
040 106-1003 RES 1K OHM 1/8W 1% ME D 090183 123199 N 2.000 EA  
041 106-2493 RES 2.49K OHM 1/8W ME D 090183 123199 N 2.000 EA  
042 106-3013 RES 3.01K OHM 1/8W ME D 090183 123199 N 2.000 EA  
043 106-3653 RES 3.65K OHM 1/8W ME D 090183 123199 N 1.000 EA  
044 106-2433 RES 2.43K OHM 1/8W ME D 090183 123199 N 2.000 EA  
046 106-1004 RES 10K OHM 1/8W 1 ME D 110283 123199 N 7.000 EA  
047 106-1104 RES 11K OHM 1/8W 1 ME D 090183 123199 N 1.000 EA  
048 106-1244 RES 12.4K OHM 1/8W ME D 090183 123199 N 2.000 EA  
049 106-1404 RES 14.0K OHM 1/8W ME D 090183 123199 N 1.000 EA  
050 106-3014 RES 30.1K OHM 1/8W ME D 110283 123199 N 1.000 EA  
EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :

1

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**STEE**

5

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## STEP

E

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ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0936  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0105 EFF: DATE SER NO LOT NO  
PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT  
ITEM COMPONENT ABBREVIATED --EFFECTIVITY-- F E  
DESCRIPTION MOD TYP FROM THRU Q QTY PER ASSY UOM X  
75 120-0018 CAP POLYCARB .027 ME D 090183 123199 N 1.000 EA  
76 120-0019 CAP POLYCARB .1 UF ME D 090183 123199 N 2.000 EA  
078 120-0020 CAP POLYCARB .15 U ME D 090183 123199 N 1.000 EA  
079 120-0021 CAP POLYCARB .18 U ME D 090183 123199 N 1.000 EA  
080 125-6401 CAP ELECT 220 UF 1 ME D 090183 110183 N 0.000 EA  
081 125-6702 CAP ELECT 470 UF 1 ME D 090183 123199 N 2.000 EA  
082 151-6701 INDUCTOR, 470 UH 1 ME D 090183 123199 N 2.000 EA  
083 197-0026 CRYSTAL, 7.3728 MH ME D 090183 123199 N 1.000 EA  
084 515-0005 CONN,PIN,SINGLE ME D 090183 123199 N 31.000 EA  
085 511-4001 SOCKET, IC 40 PIN ME D 090183 123199 N 1.000 EA  
086 511-1601 SOCKET, IC 16 PIN ME D 090183 123199 N 5.000 EA  
087 511-1401 SOCKET, IC 14 PIN ME D 090183 123199 N 7.000 EA  
EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0937  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0105 EFF: DATE SER NO LOT NO  
PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT  
ITEM COMPONENT ABBREVIATED --EFFECTIVITY-- F E  
DESCRIPTION MOD TYP FROM THRU Q QTY PER ASSY UOM X  
88 511-0801 SOCKET, IC 8 PIN ME D 090183 123199 N 2.000 EA  
39 860-0093 STANDOFF, .250 DIA ME D 090183 123199 N 2.000 EA  
0 800-5028 REIDENTIFIED AS 69 ME D 090183 101683 N 0.000 EA  
091 820-5015 PCB,SERVO,WIDGET ME D 110283 123199 N 1.000 EA  
092 400-1404 SCR 4-40X1/4 PN HD ME D 090183 110183 N 0.000 EA  
093 860-0263 SPACER, HEX 4-40 X ME D 090183 110183 N 0.000 EA  
094 699-5007 SHIELD,SERVO BD.,W ME D 090183 110183 N 0.000 EA  
095 130-0106 CAP CER AXIAL 470 ME D 110283 123199 N 1.000 EA  
096 101-8332 RES 3.3K OHM 1/8W ME D 110283 123199 N 1.000 EA  
097 860-0090 STANDOFF, .250 DIA ME D 110283 123199 N 3.000 EA  
098 101-4330 RES 33 OHM 1/4W 5% ME D 110283 123199 N 1.000 EA  
099 125-6402 CAP ELECT 220 UF 1 ME D 110283 123199 N 3.000 EA  
EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE \*\*

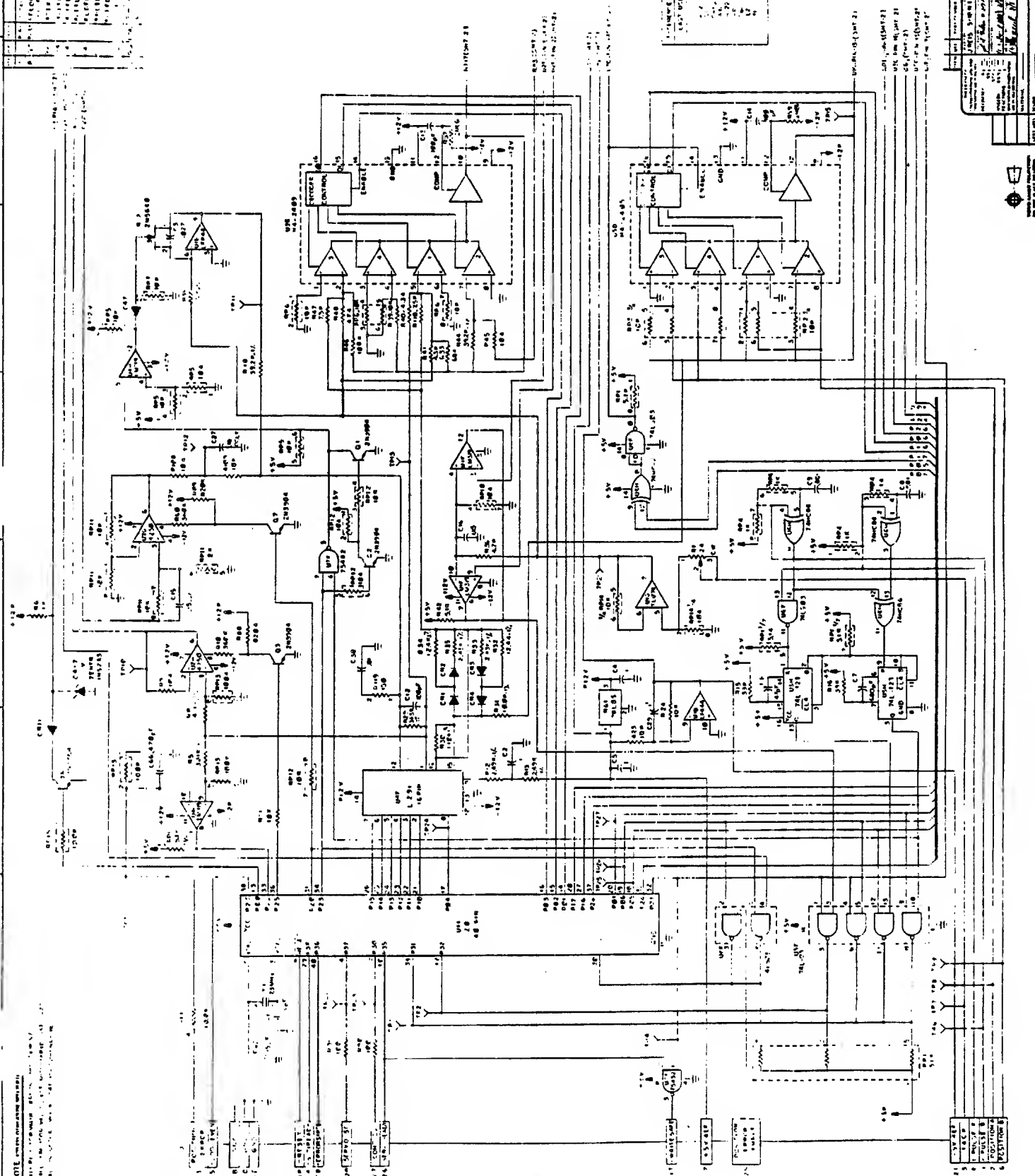
ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 <0938it >>  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0105 EFF: DATE SER NO LOT NO  
PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT  
ITEM COMPONENT ABBREVIATED --EFFECTIVITY-- F E  
DESCRIPTION MOD TYP FROM THRU Q QTY PER ASSY UOM X  
100 341-0302 IC,28 SERVO,MASKED ME D 112184 123199 N 1.000 EA  
999 050-5026 SHEMATIC,SERVO BD. ME D 090183 123199 N 0.000 EA

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Apple Computer, Inc.	
SCHEMATIC: SERVO BOARD, WIDGET	
DATE: 1/15/77	BY: J. G. KELLEY
REV: 1	CHK: J. G. KELLEY
PDP-802-C	



NOTE: OTHER COMPONENTS ARE SHOWN  
ON THE SERVO BOARD, WIDGET, AND  
ON THE SERVO BOARD, WIDGET, AND  
ON THE SERVO BOARD, WIDGET, AND

**ENGINEERING RELEASE**

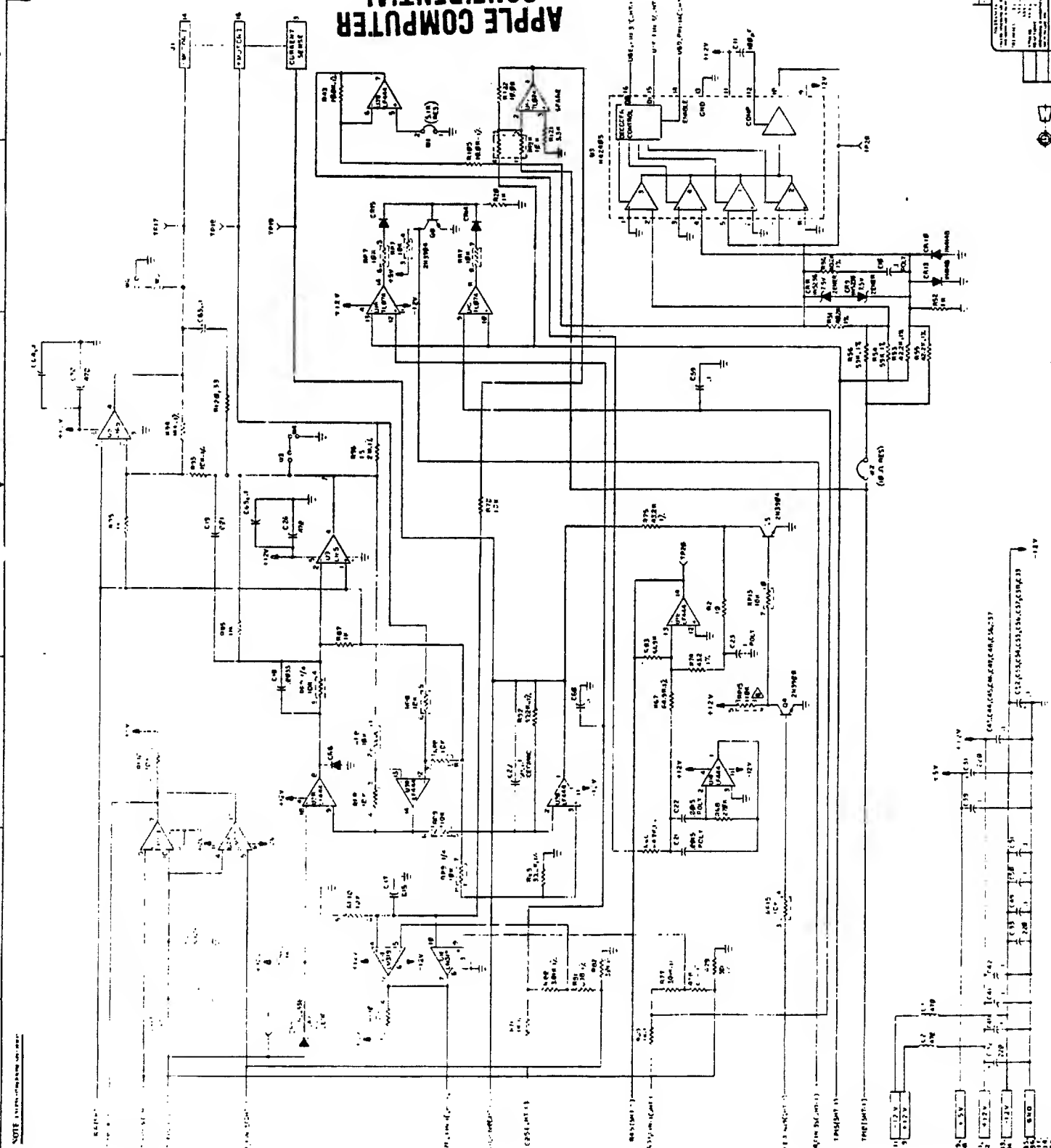
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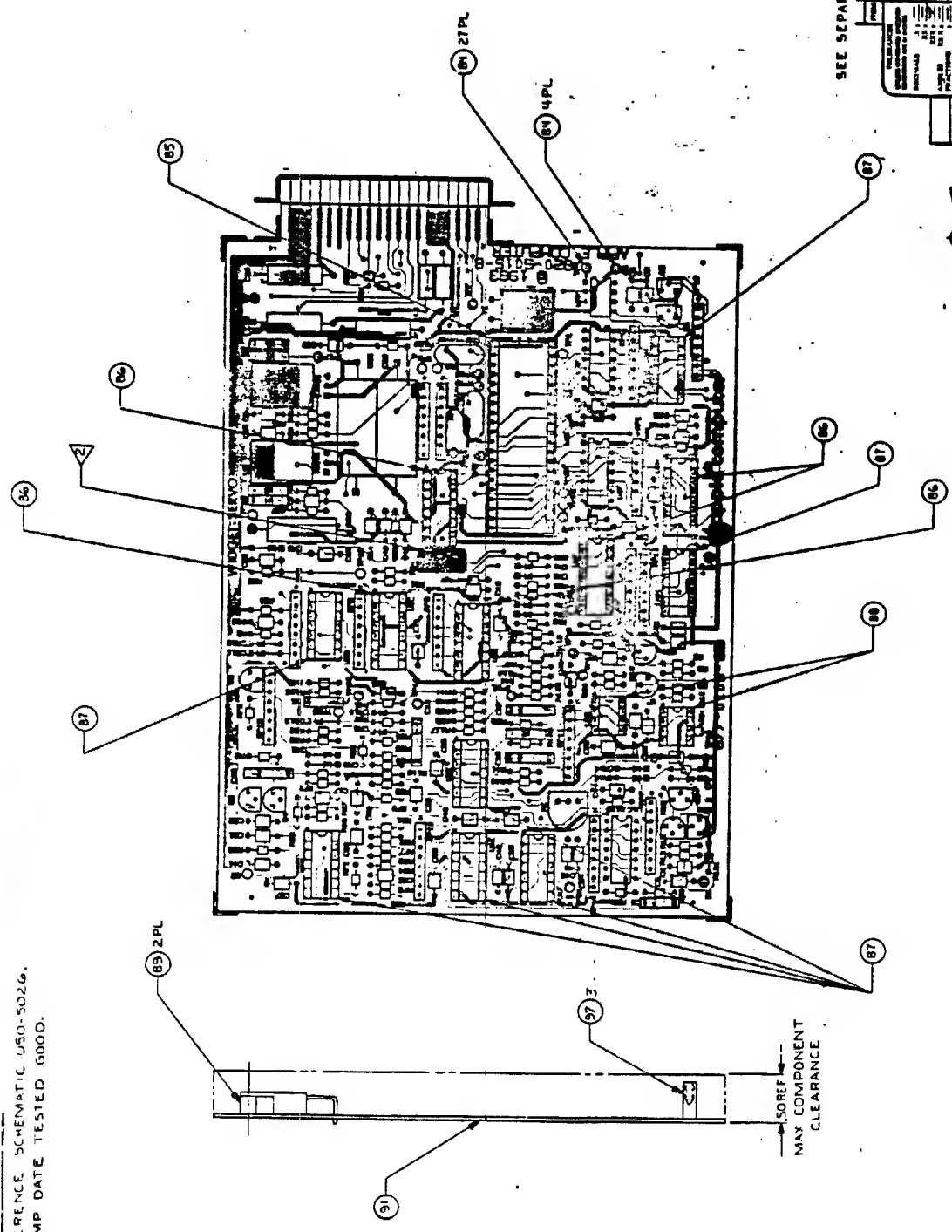
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**CONFIDENTIAL**



REVISED	REVISION	DESCRIPTION
1	1	REVISED DE KIRKMAN
2	2	RB, 49, 9K, 15, WAS
3	3	RB, 30, 18, 12,
4	4	REMOVED SOCKETS
5	5	UGF, USF AND UIG
6	6	FROM ITEM 87,
7	7	U7F FROM ITEM 87
8	8	BOM CHANGE ONLY

1. REFERENCE SCHEMATIC USO-5026.  
2. STAMP DATE TESTED GOOD.



SEE SEPARATE BILL OF MATERIALS 677-0105-E

677-0105-E	
DATE	12-1-68
BY	W. J. KIRKMAN
DESCRIPTION	
WIDGET COMPUTER INC.	
WIDGET ASSEMBLY, PCB,	
SERVO CONTROL,	
UNTESTED, WIDGET	
D 677-0105-E	
SCALE	2 X
PAGE 1 OF 1	

THIS IS A PRELIMINARY DRAWING  
AND NOT BE USED FOR PRODUCTION

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1  
EXPLOD1 PART COMPONENTS EXPL INQ - 1

08/15/85 0912  
01PMH

STEP

ASSY 677-0108  
LT MODEL

EFF: DATE SER NO  
SEQ(I,C) I SKIP TO ITEM/COMPONENT

LOT NO

TM	COMPONENT	ABBREVIATED	DESCRIPTION	MOD	TYP	FROM	THRU	Q	QTY	PER	ASSY	UOM	E
001	337-8603		IC SOCKET MICROPRO	ME	D	100383	123199	N					
002	341-0268		REIDENTIFIED, SEE	ME	D	100383	123199	N					
003	341-0264		IC, GA CONTROL	ME	D	100383	123199	N					
004	341-0262		IC, GATE ARRAY ECC	ME	D	100383	123199	N					
005	333-6116		IC, RAM, STATIC 2Kx8	ME	D	100383	123199	N					
006	341-0289		IC, ROM/EPROM, CUSTO	ME	D	100383	123199	N					
007	305-0000		IC, 74LS00N	ME	D	100383	123199	N					
008	305-0009		IC, 74LS00	ME	D	100383	123199	N					
009	305-0032		IC, 74LS32	ME	D	100383	123199	N					
010	305-0259		IC, 74LS259	ME	D	100383	123199	N					
011	297-0240		IC, 74HCT240, OCTAL	ME	D	100383	123199	N					
012	378-0003		LED, GREEN	ME	D	100383	123199	N					
EXPLOSION LEVEL : 1													

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE

\*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1  
EXPLOD1 PART COMPONENTS EXPL INQ - 1

08/15/85 0913  
01PMH

STEP

ASSY 677-0108  
PLT MODEL

EFF: DATE SER NO  
SEQ(I,C) I SKIP TO ITEM/COMPONENT

LOT NO

TM	COMPONENT	ABBREVIATED	DESCRIPTION	MOD	TYP	FROM	THRU	Q	QTY	PER	ASSY	UOM	E
013	375-0050		DIODE, ARRAY, 7 PIN,	ME	D	100383	123199	N					
014	111-0017		RES NETWORK 9 X 3.	ME	D	100383	123199	N					
015	112-0015		RES NETWORK 4 X 10	ME	D	100383	123199	N					
016	137-5301		CAP DIP MICA 15 pF	ME	D	100383	053184	N					
017	130-0007		CAP CER AXIAL .1 U	ME	D	100383	123199	N					
018	127-0005		CAP TANT 22 uF 20%	ME	D	100383	123199	N					
019	515-0185		CONN, HDR, STR, SHRD,	ME	D	100383	123199	N					
020	860-0421		STANDOFF, RND THRU	ME	D	100383	123199	N					
021	511-1401		SOCKET, IC 14 PIN	ME	D	100383	123199	N					
022	511-1601		SOCKET, IC 16 PIN	ME	D	100383	123199	N					
023	511-2001		SOCKET, IC 20 PIN	ME	D	100383	123199	N					
024	511-2401		SOCKET, IC 24 PIN	ME	D	100383	123199	N					
EXPLOSION LEVEL : 1													

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE

\*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0913  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0108 EFF: DATE SER NO LOT NO  
PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT  
ABBREVIATED --EFFECTIVITY-- F E  
TM COMPONENT DESCRIPTION MOD TYP FROM THRU Q QTY PER ASSY UOM X  
5 511-2801 SOCKET, IC 28 PIN ME D 100383 123199 N 1.000 EA  
026 511-4001 SOCKET, IC 40 PIN ME D 100383 123199 N 1.000 EA  
027 511-6805 SOCKET, LEADLESS CH ME D 100383 123199 N 1.000 EA  
028 515-0005 CONN, PIN, SINGLE ME D 100383 123199 N 9.000 EA  
029 197-0026 CRYSTAL, 7.3728 MH ME D 100383 123199 N 1.000 EA  
030 946-0000 TAPE, FOAM, DOUBLE ME D 100383 123199 N 0.000 RL  
031 400-1208 SCR 2-56X1/2 PN HD ME D 100383 123199 N 2.000 EA  
032 835-0152 NUT/WASHER ASSY, ( ME D 100383 123199 N 2.000 EA  
033 101-4332 RES 3.3K OHM 1/4W ME D 100383 123199 N 4.000 EA  
034 101-4241 RES 240 OHM 1/4W 5 ME D 100383 123199 N 2.000 EA  
035 515-0046 CONN, HDR, RT ANG, 8P ME D 041384 123199 N 1.000 EA  
036 515-0111 CONN, HDR, RT ANG, 13 ME D 100383 123199 N 1.000 EA  
EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0914  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0108 EFF: DATE SER NO LOT NO  
PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT  
ABBREVIATED --EFFECTIVITY-- F E  
ITM COMPONENT DESCRIPTION MOD TYP FROM THRU Q QTY PER ASSY UOM X  
37 101-4102 RES 1K OHM 1/4W 5% ME D 100383 123199 N 1.000 EA  
38 101-4512 RES 5.1K OHM 1/4W ME D 100383 123199 N 1.000 EA  
39 305-0157 IC, 74LS157 ME D 100383 123199 N 1.000 EA  
040 515-0160 CONN, HDR, RT ANG, 2P ME D 100383 123199 N 1.000 EA  
041 515-0053 CONN, HDR, STR, 2P ME D 100383 123199 N 1.000 EA  
042 130-0209 CAP CER 330 pF 5% ME D 100383 123199 N 1.000 EA  
043 820-5016 PCB, LISA WIDGET CO ME D 100383 123199 N 1.000 EA  
044 305-0240 IC, 74LS240 ME D 041384 123199 N 0.000 EA  
045 515-0151 CONN, HDR, RT ANG, 8P ME D 010101 041284 N 0.000 EA  
046 130-0129 CAP CER AXIAL 8.2 ME D 060184 123199 N 2.000 EA  
047 515-0370 CONN, HDR, STR, UNSHR ME D 060184 123199 N 1.000 EA  
048 137-6101 CAP DIP MICA 100 p ME D 090584 123199 N 1.000 EA  
EXPLOSION LEVEL : 1

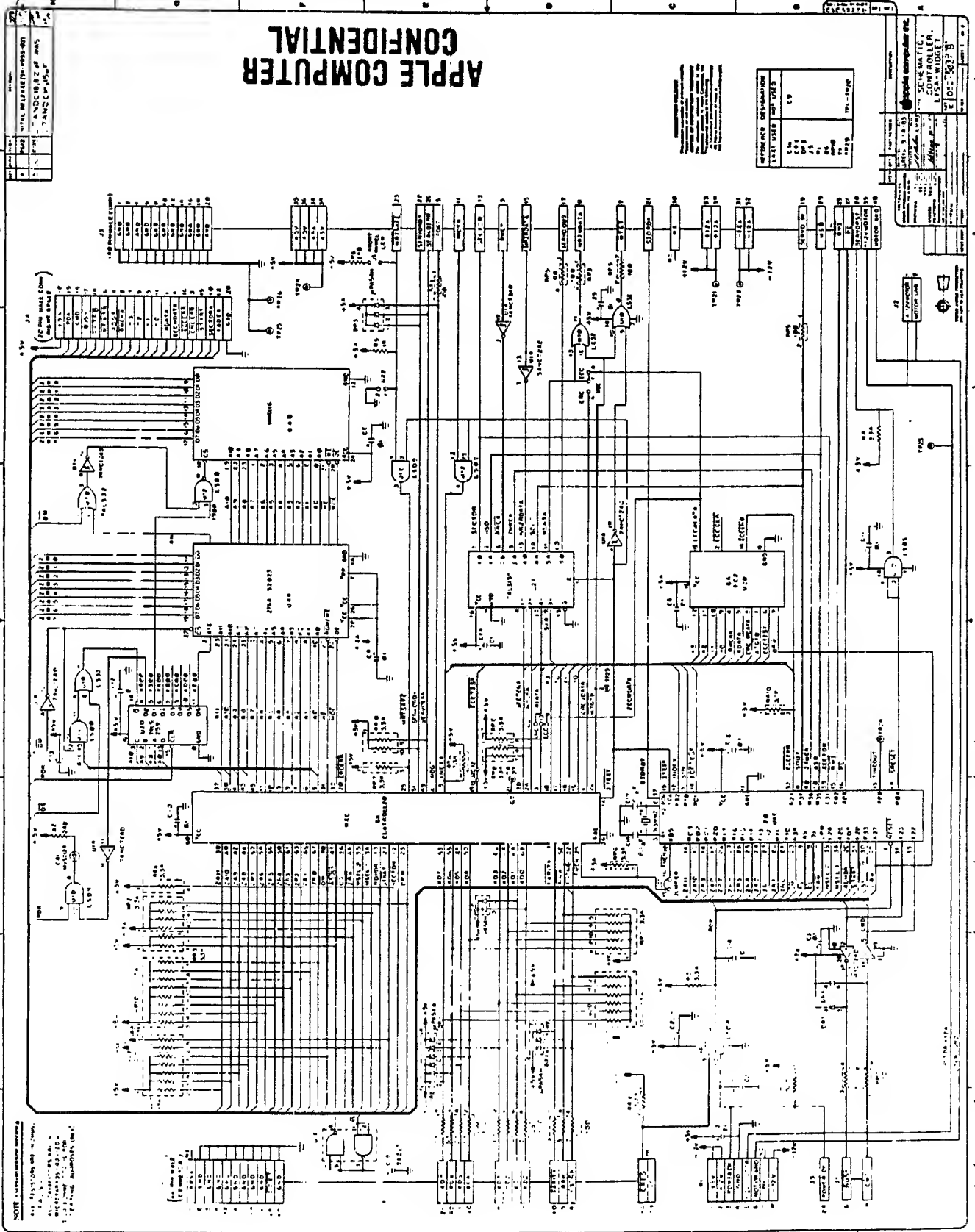
NEXT RESPONSE : EXPLOD1 NEXT KEY :  
DC700011 MORE \*\*

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0915  
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0108 EFF: DATE SER NO LOT NO  
PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT  
ABBREVIATED --EFFECTIVITY-- F E  
ITM COMPONENT DESCRIPTION MOD TYP FROM THRU Q QTY PER ASSY UOM X  
999 050-5027 SCHEMATIC, LISA WID ME D 100383 123199 N 0.000 EA

# APPLE COMPUTER

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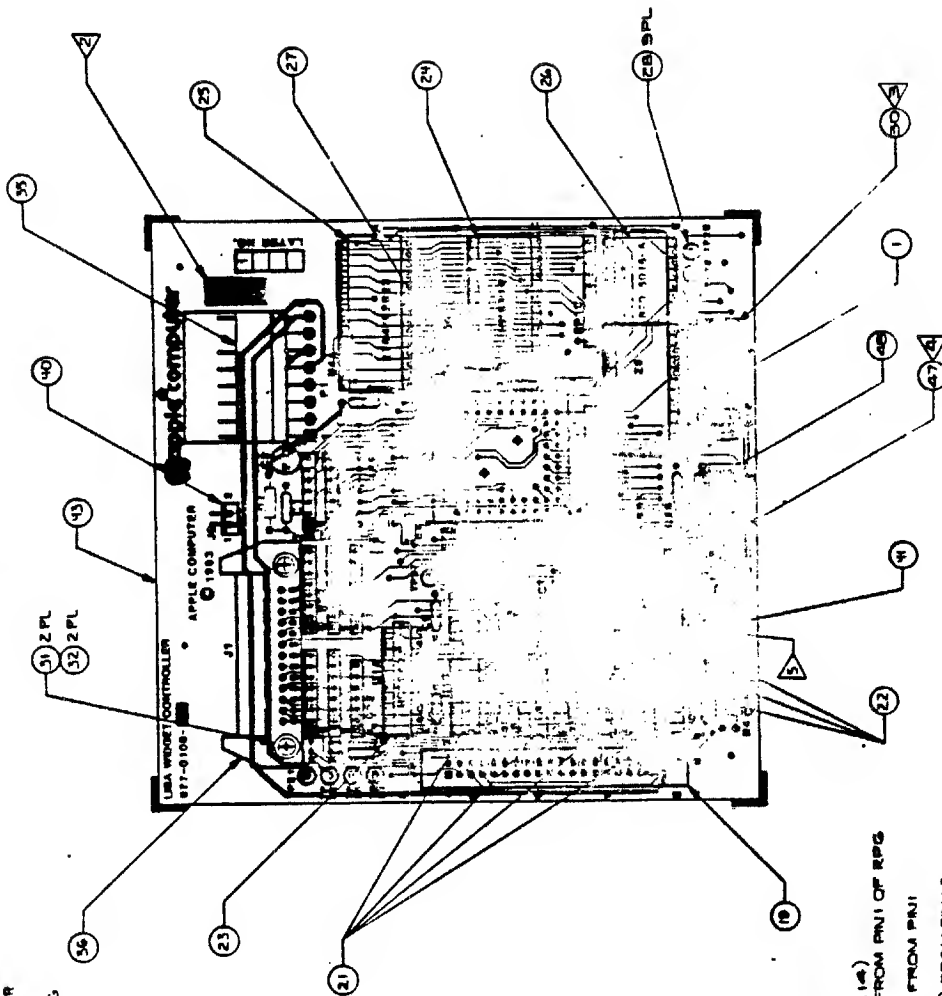
NOTE: See Appendix A for component values.





1. REFERENCE SCHEMATIC: 050-5027-A

1. REFERENCE SCHEMATIC: 050-5027-A
2. STAMP DATE TEST GOOD.
3. MOUNT ITEM 30 (FOAM TAPE) UNDER  
ITEM 29 (YI, CRYSTAL).
4. ITEM 47 (20 PIN HEADER) IS FOR TESTING  
PURPOSES ONLY.
5. C9 TO REMAIN OPEN (CAPACITOR  
NOT REQD).



1. REMOVE RP2 & RP7 (11-007, ITM 14)  
2. ADD 3 BK RES. (01-4332, ITM 53) FROM PN1 OF RP3  
TO PNE OF RP7, REF DES R7.  
3. ADD 3 BK RES. (01-4332, ITM 53) FROM PN1  
TO PNE OF RP7, REF DES R8.  
4. ADD 100% CAP (157-610, ITM 45) FROM PN14  
TO PNE OF J5, REF DES C80.

[illegible]

THE UNIVERSITY OF CHICAGO

